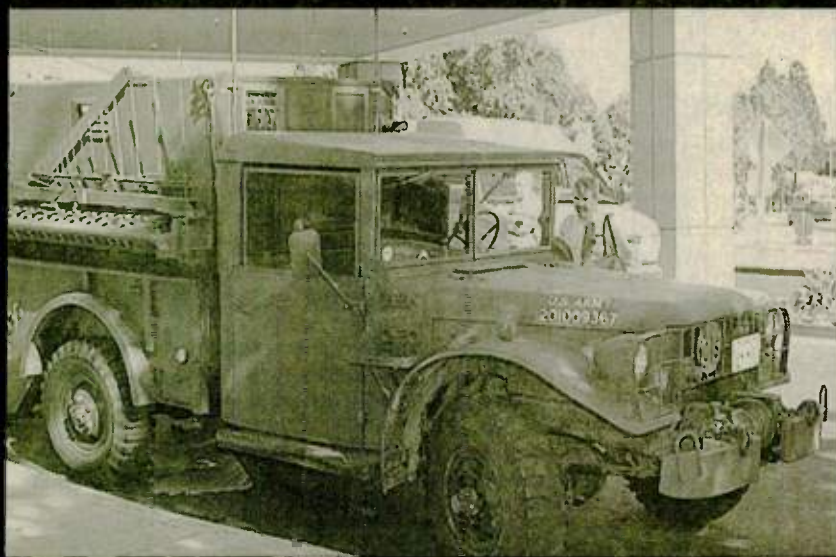


WORLD RADIO

Year 29, Issue 6

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QRP from a Greek island – 6

Two notable mobiles – 11

Two conventions – three weeks – 14

What's in a name – 21

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FCC tackles border dispute

FCC Legal Adviser for Enforcement Riley Hollingsworth has made good on a promise to look into complaints of apparent U.S. malicious interference to a repeater in Mexico operating on 145.460 MHz.

"We've been getting some vigorous complaints for a little while now about the repeater system KC6OKA/K6PYP," Hollingsworth said this week. U.S. amateurs also approached him about it during the recent Southwestern Division Convention in Long Beach, California.

Hollingsworth said the repeater, jointly owned and operated by Angos Winke, KC6OKA, and Scott V. Swanson, K6PYP, is on 145.460/144.860 MHz. He said the KC6OKA/K6PYP repeater apparently ignores a voluntary coordination arrangement and seems to be causing a lot of interference in Mexico. In addition, he said, "there are problems on there with music being played, tapes being played, obscenity and profanity."

Earlier this month Hollingsworth wrote Winke and Swanson to inquire about alleged "broadcasting, playing music, transmitting tape recordings and the use of high power" and unmodulated carriers to deliberately interfere with the Mexican repeater system.

"Our information indicates that the use of this frequency pair for these purposes is contrary to a longstanding voluntary frequency plan in effect in your area in cooperation with Mexico," Hollingsworth told the two licensees.

He asked Winke and Swanson for detailed information on the operation of the repeater system including steps taken to ensure no interference is caused to other amateurs in the repeater's coverage area or in Mexico. Winke and Swanson have 30 days to reply.

Hollingsworth says the issue goes beyond a local repeater coordination squabble and he wouldn't want to see anything jeopardize the solid working relationship between the U.S. and

Mexico. "We get very good cooperation on radio interference matters from Mexico," he said, adding that the FCC has a regional office of Mexican affairs in the San Diego area. "Mexico helps us a great deal with interference problems, and we're not going to tolerate any deliberate interference to Mexico." — *ARRL Letter*

ISS flights reset

NASA now says the space shuttle Atlantis flight, mission STS-101, that will carry the initial Amateur Radio gear into space for the International Space Station will launch no earlier than 10 February 2000.

The flight transporting the VHF and UHF hand-held transceivers and associated antennas and accessories to the ISS had been scheduled to launch in December. NASA imposed a shuttle launch hiatus to perform electrical inspections of the entire shuttle fleet, however, disrupting the launch schedule. The inspections came in the wake of problems during the July launch of the shuttle Columbia, when astronauts and ground

controllers struggled with power failures in computers controlling two of the orbiter's three main engines.

"Our number one priority for the space shuttle is to fly safely, and that is why we delayed our launch preparations and have performed comprehensive wiring inspections and repairs," Space Shuttle Program Manager Ron Dittemore said.

NASA and Russian space agency officials also have agreed to delay the launch of the Zvezda service module that will house the amateur gear. According to a NASA, a U.S. delegation and the Russians agreed that "it is no longer prudent to proceed with the current service module schedule." The new projected launch window is between 26 December and 16 January.

In August, key antenna hardware for

the Amateur Radio on the ISS project headed for NASA's Goddard Space Flight Center to undergo integration and flight qualification testing.

The initial Ham gear will support amateur operation from the ISS on voice and AFSK packet on 2 Meters and 70 cm.

For more information on ARISS, visit <http://garc.gsfc.nasa.gov/~ariss/ariss.html>. — *ARRL Letter*

Solar maximum prediction

Solar physicist David Hathaway at the Marshall Space Flight Center says he expects the current solar cycle to peak by mid-2000. "The projected peak is comparable to, but lower than the peaks of the last two maxima, 1989 and 1978," Hathaway says. One thing is for sure — as the geomagnetic activity increases so do the chances of more geomagnetic storms. While there will be more disturbances, those in the mid-latitudes will have the unique opportunity to see some spectacular sights that are normally visible during these times only in the higher latitudes. — *NASA, The Daily DX, ARRL Letter*

Gettysburg FCC office gets monitoring antenna

In October, the Army Corps of Engineers installed an all-band delta loop antenna at the FCC's Gettysburg facility. Among other purposes, this system, at a height of 75 feet, will assist in real-time monitoring of the Amateur Radio Service and serve as a "force multiplier" for the High Frequency Direction Finding Center in Laurel, Maryland. — *K4ZDH, ARRL Letter*

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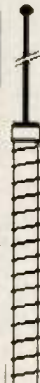
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On the cover

Two conventions in three weeks, Long Beach and Concord, CA — **Worldradio** on the road!
— page 14.



QRP from Zaky-nAhos

Who says you need the biggest radio and monster antennas on a DXpedition?

— page 6.

This month on the web

The **Worldradio** website, www.wr6wr.com, has been revised and updated. You will find new stories, features and links to the best of what Amateur Radio has to offer. New features will be uploaded weekly. Check our site today for the following feature articles:

Old-Old Timers Club

3B7RF DXpedition

And more uploaded every Wednesday!

Remember to check often for the latest and greatest information.

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Next month: County Hunter, FM, Repeater & VHF, Old-Time radio, QCWA, With the Handi-Hams, and Youth Forum.

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Editor's Log

Last month, we referred to the effects RF radiation has on Amateur Radio operators. There's another factor involved — radiation from the sun. Not only does it affect propagation, it also enhances the intelligence of Amateur Radio operators. Prolonged exposure to the sun's radiation (as in long summer days) has resulted in the following readers becoming *Worldradio* Super Boosters:

- William M. Wilson, N2VWA
East Quogue, NY
- William O'Donnell, W2XJ
Nunda, NY
- David R. Wilson, WA2HOY
Rochester, NY
- Ronald J. Polityka, WB3AAL
Reading, PA
- David Assaf, III, W5XU
Baton Rouge, LA
- John A. Evans, NØHJ
Colorado Springs, CO
- David A. Poulson, N7KFL
San Pedro, CA
- William Holliday, Jr, WB6EDE
Arleta, CA
- Allen Pettebone, KA6WGO
Wood Ranch, CA

• James W. Cox, W7GIS
Springfield, OR

What is it going to take to get people interested in Amateur Radio? Part of the answer is to get them interested in what we actually do. Did you know that kids in the eighth grade in the U.S. now rank below South Korea, the Czech Republic and over two dozen other countries in math and science performance? Each and every club should be checking into the possibility of demonstrating Amateur Radio to science classes at schools. When I was taking Physical Science classes in junior and senior high school, my favorite parts of the class were when the teacher could actually show us how something worked. Things we had been studying were demonstrated to us, and we got to see how it actually worked. An actual hands-on demonstration is the best teaching technique.

What other classes would be interested in Amateur Radio? How about Geography? A few years ago, I put on a demonstration of Amateur Radio at my daughters' school. I set up my trusty old Heathkit SB-102, and strung a dipole

up between a couple of buildings. We didn't make a lot of contacts, due to it being the low end of the sunspot cycle, but we were able to contact WB2JKJ in New York City. Having some junior high students in Sacramento talking to their counterparts in New York City made my day. It was fun! Not only did I have the kids interested, I had the teacher interested, too! At the lunch break, kids were telling each other about talking on the radio to other kids who hadn't been to the class yet. Making contacts around the country on 20 and 40 Meters and having the kids look up the locations would be very educational. It could even interest them in studying for a license!

But first, we have to get them away from the television. The average American spent 1,595 hours watching television in 1998. That's about 4.4 hours per day. What else were they doing? Listening to the radio — 2.9 hours per day. 45 minutes were spent listening to recorded music of some kind, while 27 minutes a day were spent reading a newspaper. Actual time spent reading a book was a measly 17 minutes. Reading a magazine took up 14 minutes a day. Rounding the numbers brings us to nine total hours per day for the above activities. If the average American spent just one hour a day doing something to better themselves, imagine what would happen? Especially when you consider that one hour could be spent studying for a license test.

Bottom line? We need more young people interested in Amateur Radio if this hobby is going to survive beyond the next 10 years.

The *Worldradio* staff was been on the move during the month of October. We had booths set up at the ARRL Southwest Convention on the Queen Mary in Long Beach, and at Pacificon in Concord, CA. It's always a pleasure to get out of the office and talk to our readers about what they want to see in *Worldradio*. Especially when we can travel on "Worldradio 1," our corporate jet. After all, *Worldradio* is your magazine. We just put it together for you!

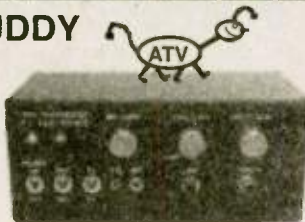
Speaking of get-togethers, conventions and such — the volunteers at a recent convention is really a bunch of lucky individuals! Not only did they win about half of the prizes drawn — the gentleman conducting the drawing won the grand prize! Isn't that something?

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Tom (W6ORG) & Mary Ann (WB6YSS)



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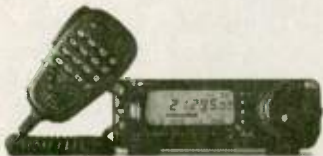
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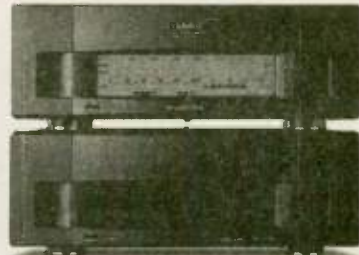
FT-840

Affordable yet feature filled, the FT-840 is an ideal traveling companion. It offers 160-10M TX with general coverage RX, 100 memory channels, DDS, CTCSS, Twin Band Stacking VFOs, and excellent receiver dynamic range.



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WORLD RADIC, December 1999 5

QRP from Zaky-nAhos (Zante) EU-052

Carl Mason, GWØVSW

The Greek island of Zakynthos, (Zante) is the sixth and southern most of the Ionian Islands, lying about 17 nautical miles west of the coast of Hias (Cape Triiti) and 14 nautical miles south of Cephalonia. It can be divided geographically into three areas. Cape Skinari in the north-west down to the south-western tip of Cape Marathia, an area sparsely populated and dominated by Mt. Vrachionas at 756 meters high. The middle part starts at the Bay of Alykes in the north to the Bay of Lagana and includes the fertile plains around the town of Zakynthos where the majority of the island inhabitants live. Finally, the eastern and south-eastern side of the island makes up the third part with Mt. Skopos at 492 meters and its foothills. There are no rivers or streams on the island, only water courses which run when the rain starts.

Our two week holiday to the Island was our first family vacation for several years and was not really intended to be a DXpedition as such. However, I hoped to be active most days and give some stations the chance to work EU052. I



Carl Mason, GWØVSW, operating the QRP plus radio.

would also look for low power stations on the usual QRP frequencies.

My choice of equipment for the trip was a QRP Plus Mk I, MFJ-971 tuner, my old Admiralty MK8 morse key which I use for portable work and a nicad battery pack normally used to power a Yaesu FT290 and loaned

to me for the trip by local Ham and friend Brian Parsons, GWØKZK. The antenna taken was a half-size G5RV but various lengths of wire and coax were also taken just in case space dictated I make my own antenna.

The flight from Cardiff was very smooth and took just over three hours to arrive at Zakynthos airport early in the afternoon. On landing we had a two hour delay while the baggage handlers finished lunch before unloading the aircraft. After collecting our bags our representative guided us to the coach for the 30 minute transfer to our resort Alykes, on the north east coast.

The following day I was able to have a better look around the apartment to see if there was a suitable place to put up the G5RV. George, the owner, was very helpful, and during the afternoon, after seeing the antenna, disappeared into his house to return with a hammer and nails and found a ladder. In five minutes he had fixed the antenna to the roof of the apartment, 8 meters up, with the ends tied off on convenient posts in his garden.

Later that day I made my first CQ call on 20m using five watts as SV8/GWØVSW. The First QSO to enter my log was with Joe, DL3MGN (559) at 1834 UTC. it was especially appropriate as this contact was 2xQRP, with Joe running just two watts with a homebrew rig from his QTH near Muenchen. Band conditions were not that good but several more countries were worked including IK3, HA, F, OM, and UA9. The last QSO that evening was with fellow QRP Club member Ari, OH9VL, in Rovaniemi, who was running just 500mw and received a report of 3-3-9.

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The temperatures during the day often reached the high 90s and did not really cool down during the night. By morning at around 0600 local time I was usually awake and decided to make this my regular period of operation during our stay. 20 Meters was open to the U.S. but despite many calls to the stations heard, KA8IFC, W1DMD and W5CNH to name a few, only one made the log. Alan, K8CW, in Mansfield, who was very strong at 5-9-9+. Receiving a 5-6-9 from him he faded a short while after as the propagation changed. It was good to know that my three watts had been copied in Ohio. Other stations heard but not worked on 20M included MM/DL5BUT/P on the Shetland Islands EUØ 12 (5-3-9), EA5/G4RNO (4-4-9), HB9CJR/QRP (5-4-9) ON5UP/QRP (5-2-9), and VK2DX (5-2-9), who was the best DX received on any band during my stay.

10, 17, and 40 Meters were all tried from the island but conditions were never very good and only a handful of stations made it into my log on these bands.

I charged the batteries when we went out during the day and would have enough power in them to operate the odd evening using just a few watts, while beating off attacks from the mosquitoes and enjoying a glass of the local wine. It was strange that conditions always seemed to get better as the nicad batteries began to lose their charge and often QSOs would end with me running less than one watt! This would usually happen after about one hour and occurred one morning on 20M when I was called by a friend in Grieskirchen, Austria.

Peter, OE5HAM is an active QRPer who only runs powers of two watts or less from various homebrew rigs and had heard me on his vertical antenna. Reports of 5-6-9 were exchanged and as my batteries started to expire he was still able to copy me even though my power had dropped down to below one watt!

One day during the second week of our holiday we hired a car. We toured the island visiting some of the mountain villages like Agi Leon and Volimes, which is near a cove that is home to a shipwreck and one of the islands most famous landmarks. On arrival back in Alykes we discovered that the car was not due to be returned until the next day. This enabled me to make use of the car's battery to power the rig and operate for a longer period of time the following morning. 17M appeared good and I managed three QSO's, Vlad, ER100/P, (5-9-9) in Kishinev, Peter, HB9BAZ, (5-8-9) near Bern, and Rafael, M/EA5CW, (5-4-9) on holiday in Blackpool, before the band



Shipwreck cove near Volimes. The dark shape on the beach is a freighter — giving the cove its name.

went quiet. 20M was not so good but allowed contacts with Robin, ZB2JK, (5-5-9) and fellow RNARS member Roy, G3VLL, (5-8-9) who had been looking for me on this band for several days from his QTH in Doncaster.

Despite my short operating times and the poor band conditions during the two weeks 102 contacts were made on 5 bands:

10M	1
17M	9
20M	79
30M	9
40M	4

25 DX countries were worked and 22



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World Radio History

two-way QRP contacts made.

I really enjoyed operating from Zakyntos with a portable QRP station. At times it was frustrating hearing DX I could not work with my low power. However, it was nice to be able to give some stations their first contact with EUØ52. I now look forward to next year and maybe the chance to operate from foreign shores once again, this time with a IC706 and slightly more power! Special thanks must go to my wife Gill and sons James and Alastair for letting me have the opportunity to operate during our stay and to George and Soula for their help and hospitality.

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Rules & Regs *David Splitt, KE3VV*

The FCC and your SSN

For some reason, the e-mails this month have included a number of questions and comments about the requirement for Social Security numbers as part of the new FCC Universal Licensing System (ULS). The writers expressed opinions ranging from outrage to conspiracy theories and there were a lot of harsh words for the FCC. Well, folks, you may have a bone or two to pick with our guardian agency here in Washington, DC, but Social Security numbers on the ULS form is not one of them. The FCC had no choice in the matter.

Back in 1996, the Congress passed (and the President signed) into law the Debt Collection Improvement Act, which requires that ANYONE and EVERYONE who does business with the federal government must supply a Taxpayer Identification Number (TIN). The definition of "doing business with the federal government" in Public Law 104-134 includes anyone who is "an applicant for or recipient of" a license from the federal government. So, my fellow amateurs, we are all now "doing business" with Uncle Sam and he's gotta have our TINs.

Actually, the FCC has concocted a way to avoid giving your Social Security number to VECs and others in the licensing food chain. By registering your Social Security number directly with the FCC (as opposed to filling it in on the VEC form you get when taking a license exam), you can obtain a unique TIN that is different from your SSN. Since the government is already aware of your SSN (you put it on your tax forms — you DO file tax forms, don't you?), there shouldn't be that much angst about giving your SSN to the FCC and getting a TIN. It can be your little secret.

Actually, just to make things a bit more confusing, the FCC is calling the special TIN you get from them an "Assigned Licensee ID" or ALID. I am not sure that some amateurs will be very happy being assigned an ALID by the FCC, especially those who are already known as LIDS among their amateur acquaintances. The ALID is much longer than your call sign and, in fact, it is longer than your social security number. Well, it is the same number of digits (8), but the numbers are preceded by the letter "L." Once you get an ALID, you can use it in

any FCC document where your Social Security number would otherwise be required. If you take advantage of the on-line capabilities of the new ULS, you can use the ALID to apply for a vanity call sign, renew your license, or make those minor changes in address and phone number.

You can also use the on-line ULS to change your name (why would you change your name — perhaps to adopt a new identity now that your old one has been compromised by "da Govmint"). It can also be used to inform the FCC of a new e-mail address, which (given the ease of obtaining multiple e-mail personas and places to get mail) conjures up several ideas for mischief — But I digress.

You don't HAVE to get an ALID. You are allowed to use your Social Security number on both VEC forms and the FCC 605. It is a lot more convenient than an ALID, requires no additional memorization, and allows you to thumb your nose at those paranoids who think that VECs are the next big source of stolen identities. Identity theft is still a problem, but the technology of stealing SSN's and credit card numbers has become so sophisticated that looking over the shoulder of the store clerk or the VEC volunteer processing your paperwork is hardly the preferred approach in the penultimate year of the 20th century. There are places you can go on the internet that will furnish you with a program that contains an algorithm that produces valid credit card numbers (fill in the name of the issuer you want to steal from, and VOILA!). No, that information will not be furnished here (and don't bug me for it by e-mail) because, despite a legitimate law degree and popular opinion of the legal profession notwithstanding, I am not into stealing.

Speaking of lawyers — well, lawyer wanna-bes — one aspiring lawyer in the outraged e-mail pile noted that Congress had passed a law way back in 1974 making it unlawful for any government entity, including your state or local government as well as the Feds, to "deny to any individual any right, benefit, or privilege, provided by law because of such individual's refusal to disclose his Social Security account number." I was most impressed by the exact quote from the Privacy Act of 1974. The e-mailer must have gotten it off a brochure handed out by a grizzled

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Rules & Regs

frontiersman driving a rusty pickup truck with a bumper sticker that read, "THEY CAN HAVE MY SSN WHEN THEY PRY IT FROM MY COLD, DEAD FINGERS," or something equally pithy.

As further proof that a little knowledge is not only dangerous, but a sign of ignorance, the correspondent omitted a crucial fact — actually a few crucial words from the same Privacy Act. The law provides an exception

for "any disclosure (or your SSN) that is required by Federal Statute." The picture becomes clearer — the Congress giveth and the Congress taketh away.

So at least we have cleared that up. If you don't like the SSN requirement for license renewals on the new "universal" FCC Form 605 or on the VEC form, then you don't have to use it. Get your own special A LID from the FCC. Then you can write your Congressman (or Congresswoman or

Congressbeing) to let them know that you don't appreciate having to be A LID in order to upgrade your Amateur Radio license. Personally, I am gonna have no trouble putting my social security number on my next license renewal form — I can copy it directly from my D.C. driver's license. Oh Freedom!!

— David Splitt, KE3VV, 6111 Utah Ave., NW Washington, DC 20115; davidsplitt@erols.com.

Southern California earthquake response

Whenever the ground shakes in Orange County, California, members of the Hospital Disaster Support Communications System (HDSCS) go into action. Because the members of this ARES group know that minutes count when hospitals need help, they don't wait for the call from a hospital or governmental agency. Instead, in accordance with established procedures, they automatically check on the hospitals, gather status, and provide it up the chain to county officials. If phones or other communications links have failed

or are overloaded, they learn about it right away and are in a position to provide immediate backup.

Such was the case when the Hector Mine earthquake rolled through Orange County early Saturday morning, downing power lines in several cities. Net Control was on the air within five minutes of the quake and 38 members began to assess the condition of 34 hospitals. Most drove to the hospitals, while one drove to the County Emergency Operations Center. The first hospital status reports came over the repeater within 10 minutes, and all medical centers were fully checked within 75 minutes.

Two amateurs remained on scene at Los Alamitos hospital, where commercial power failed. The generator did not support X-ray and CT-Scan equipment, necessitating closure of the Emergency Department.

"I have an update from the Emer-

gency Department here. They are closing down due to internal disaster, they have no xrays and no CT and they cannot accept any new patients. WA6NIA Los Alamitos standing by."

Hospital officials had been unsuccessful in contacting the Edison Company by phone, so they turned to the amateurs, who used the link they had established to County EOC.

"Los Alamitos go ahead."

"Info on closing the ER has been relayed. Also be advised they did get in touch with Edison from here. Edison was unaware the hospital was on emergency power, but they know now and they are looking into it. No ETA to report. N6IVO EOC back to net."

To many Amateur Radio operators and officials, this quake seemed like a non-event. But to the one hospital here that had to struggle to serve its patients, it was indeed a big deal. — *Newsline*

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Two notable mobiles

Rick McCusker, WF60

Two fine examples of mobile radio installations were seen in Castaic, California, while we were on our way to the ARRL Southwest Division convention on 30 September.

The first mobile is owned by Don Stribling, KH6DX. I had received a letter with a diagram of Don's truck, so I made an appointment with him to take a look at his installation.

Don has a complete 160-10M station

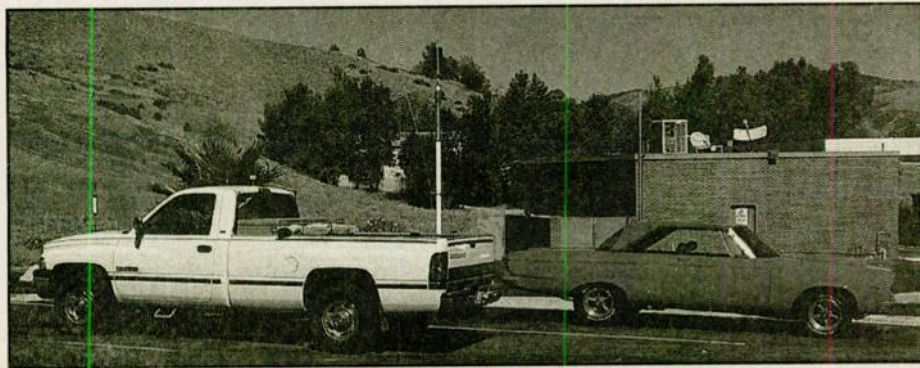
of 6-band WAS mobile!

Inside the cab, Don has installed a Kenwood TS-450S transceiver, an MFJ DSP audio filter, MFJ noise canceler with an RF amplifier, homebrew antenna tuner with control remote, homebrew linear amplifier switching and control remote, a homebrew remote console and an RF Applications power meter. On the fold-down seat back he has a Compaq laptop PC for mapping and logging, and mounted on top of the steering column is a Garmin GPS-III for use with the mapping program.



Don Stribling, KH6DX, has everything a Ham could desire installed in his Dodge Ram pickup. Paul Rose, W6PMR, has his mobile set up for blazing fast speed. Can you find the antenna on Paul's 1965 Plymouth Satellite?

Answer: Paul's antenna is inside the fiberglass rear bumper!



installed in his Dodge Ram pickup. When I say complete, I mean complete. He has enough gear in his truck to make any amateur wish he had this gear at the home station. Funny thing is, Don doesn't have a home station! It's all mounted in his truck, and all of his operating is done as a mobile station. Seems there is a problem with CC&R's in his neighborhood, so rather than fight, he just operates from his truck.

Now most amateurs would say that Don has a severe handicap by operating mobile and using just a set of mobile antennas. Don't tell Don that! He's earned 6-band WAC on 160-10 Meters. He has 258 DXCC countries confirmed with DXCC on 10, 15, 20 and 40 Meters. He has 77 countries on 80 Meters and 63 countries on 160 Meters. He's very close to completion

But that's not all! In a custom-built box behind the cab, Don has a Ten-Tec 500-watt amplifier, a homebrew 800-watt amplifier and a homebrew KW low pass filter. All of these are remotely controlled from the drivers seat. Now, that's a lot of power, and we all know the problem with that — heat! The box is insulated and air-conditioned by a duct running from the cab through the front wall of the box and monitored from the cab. If the temperature starts to rise, Don just turns the air conditioner up higher!

This mobile station takes a LOT of power to run — but Don has that base covered, too. In another box behind the amplifier box, Don has two 1,200 amp-

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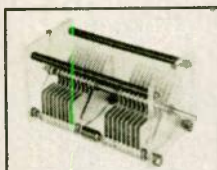
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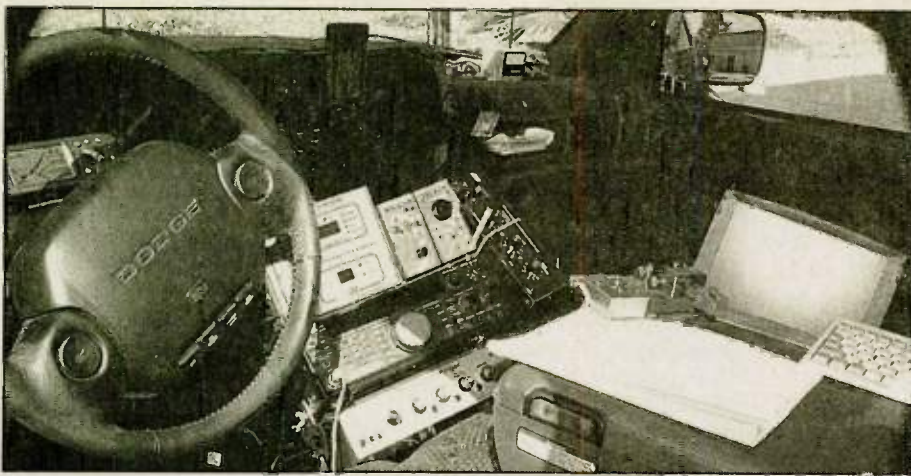
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There isn't a lot of room to carry passengers, but this is a first-class mobile installation with all the toys you could want.

hour batteries in parallel just to power the amplifiers. He also has an 800 amp-hour battery to run the transceiver and all the accessories. These batteries are charged by a 120-amp alternator through a homebrew battery isolator and RFI filter mounted under the hood. So now you're saying, "That's a lot of ignition noise", right? Not so. Don's truck is powered by a Cummins diesel engine — no ignition!

What about antennas? How about a homebrew screwdriver on the rear of the truck, and a 160-80M center loaded whip that's grounded to the chassis on the front bumper? But, that's not all. He also has a 4-turn open loop antenna mounted on the roof of the cab that can be adjusted from inside. Not done yet! Don also has a 10-meter vertical near the screwdriver.

Wow, what a setup! Is this the ultimate mobile?



Paul's Satellite is a good example of a 1960's street racing machine. Late for your VE Exam? This is the car you want!

While we were waiting for Don, a magnificent example of typical Southern California transportation pulled into the parking lot. I was admiring the fine example of rapid transit, and asked the driver, "What are you running?" He replied, "Nothing at the moment. Everything was removed so I can have the roll cage installed." That kind of puzzled me, as I was referring to what he had under the hood, and he was talking about his radios. He, being Paul Rose, W6PMR, had seen my WF6O license plate and thought I was asking what radios he had. I was referring to his engine!

Paul's car is not your typical Amateur Radio mobile. It's a 1965 Plymouth Satellite "Super Stock clone", with a 440 cubic inch engine putting out 600 h.p. through a 4-speed transmission. It's fire-engine red and is the kind of vehicle I dream about owning someday. (Hey, I grew up in Southern California in the '60s. Fast cars were mandatory!) I was kind of curious about antenna installations, so he said he would give me five minutes to find the antenna, while he went in and ordered a burger.

I'll be the first to admit that I couldn't find one! Paul told me that his bumpers are fiberglass, and when he built the bumpers, he installed a dipole antenna — inside the rear bumper!

Paul loves to operate as a "stealth mobile" and gets some interesting looks when people discover it's actually an Amateur Radio mobile installation.

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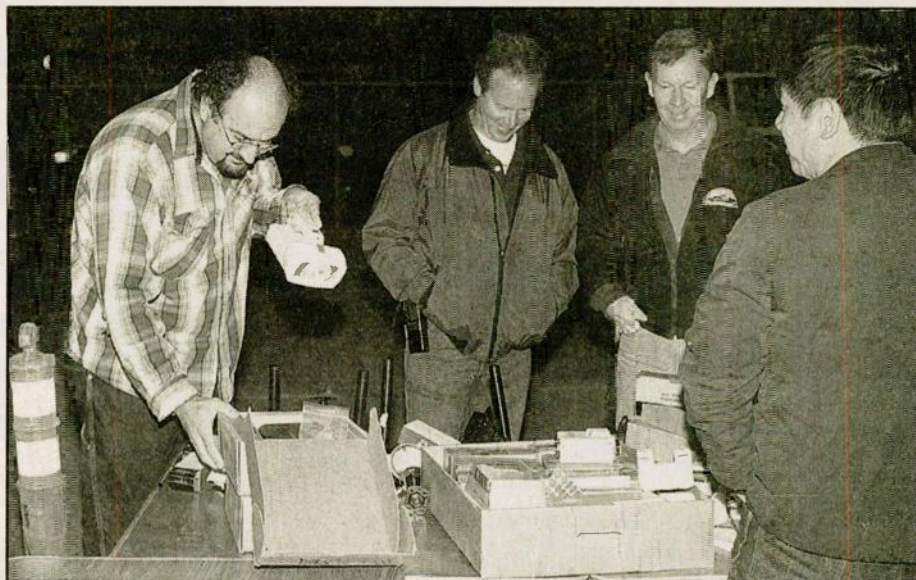
Rick McCusker, WF6O

October certainly was a busy month for the staff at *Worldradio*. We made the journey to two Amateur Radio conventions in a three-week period.

The ARRL Southwest Division convention was held on the first weekend of October aboard the *Queen Mary* in Long Beach, CA. Long a favorite site for conventions, the *Queen Mary* is especially attractive for amateurs because of the long history of Amateur Radio operations from the permanently moored ocean liner.

The convention got under way under unseasonably warm weather conditions for Southern California, and the action aboard the *Queen* just made the mood that much hotter.

The most popular attraction had to be the W6RO shack, located on the same deck as the bridge. Nate Brightman, K6OSC, and his group of dedicated volunteers has turned this room into a regular stop for both amateurs and visitors just touring the ship. And busy, it was! A non-stop stream of amateurs flooded into the room to take a look and a turn at the key or microphone



Bargain hunters at Pacificon's flea market discovered that a flashlight is essential. It starts an hour before dawn.

as a guest operator at W6RO. A nice certificate was issued to each operator as a souvenir of the time spent at the key or microphone.

On Saturday morning, Bob Heil, K9EID, put on a fabulous demonstration of audio and the way manipulating it can increase a contestor's score, or bust a pile-up. If Bob is scheduled to appear at a convention near you, this is one demonstration you have got to see. It's extremely educational.

And talk about educational, Riley Hollingsworth, K4ZDH, was the top attraction when he appeared at the FCC forum. It was standing room only, and Riley used all of his allotted time to bring the audience up to date on what is happening in the enforcement arm of the FCC. (If you want to read

his complete presentation, visit our webpage at www.wr6wr.com. Sorry, it would have taken up five pages to put it in the magazine.) He also announced the formation of the FCC Enforcement Bureau, due to be operating by the time you read this.

Entertainment was provided by Bob Heil playing an organ provided by Joe Walsh, WB6ACU. Bob spent many years as a "roadie" with several rock and roll bands, and was really cherishing the thought of having Joe as his "roadie" for the evening. Bob plays professionally in Chicago as a theater organist. His music really made the audience want to dance!

The banquet speaker on Saturday evening was Riley Hollingsworth, K4ZDH, and he spent a good portion of his time reiterating his earlier presentation, and taking questions from the audience. A good time was had by all.

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Left: Mary Yost from Mr. NiCad was very busy all weekend.

Below: Dale McAtee, KT6DM, and his XYL, Katie, hunting foxes.

On Sunday, the convention came to an end, and we embarked on the 400+ mile commute back to Sacramento.

Pacificon

For the second year, Pacificon was held at the Sheraton Hotel in Concord, California. The forums are held at the Sheraton, while the commercial vendors and exhibits are located in a hangar at the airport — a mere 100 yards from the hotel lobby.

Friday was the day for setting up the booth, and for the antenna forum. The antenna forum started bright and early on Friday morning and lasted well into the afternoon.

A nice feature of Pacificon this year was the change in the layout for the booths in the hangar. Foot traffic flow was greatly improved and it was very easy to see everything you wanted to see in a very short time.

The Northern California QRP Club (NorCal) always shows up in force at Pacificon and this year was no exception. Gold shirts were everywhere! As usual, they were a rowdy but fun bunch of QRPers. And I must say, they had some outstanding exhibits and demonstrations going almost non-stop from Friday evening to Sunday morning.

One problem cropped up on Saturday morning. The flea market, a very large draw for Pacificon, started at 6:00 a.m. Sunrise this time of year in Northern California is about 7:20 a.m., so those getting an early start had to have a good flashlight and fresh batteries to search for that special "bargain" among the Amateur Radio "junque" for sale by the many vendors.

The FCC forum on Saturday featured Riley Hollingsworth. He brought the Northern California amateurs up to date with a similar presentation to the previous one in Long Beach. Saturday evening Riley stopped by the *Worldradio* Presidential Suite and kept us entertained with his outlook on



where enforcement in Amateur Radio is going.

Several other forums, including an outstanding one on VHF contesting filled the remainder of the day on Saturday.

The banquet was well-attended, although interrupted by the boisterous

gang of QRPers in the next room. They certainly were having a good time!

Sunday morning was spent fox-hunting! I met Dale McAtee, KT6DM, (a *Worldradio* Super Booster) and his lovely XYL, Katie, at the lobby of the Sheraton for the beginner's foxhunt. It was a nice hunt with a fox hidden in the bushes transmitting with 100 milliwatts of power. It was located by all, and was within 50 yards of the starting line.

Later in the afternoon came the fox hunt for all. Once again, Dale, Katie and I formed a team to find the fox. But there was a catch this time. The fox was using five watts and was in the perfect location to bounce signals all over the place! The signal was bouncing off a concrete wall, the side of a rental truck and the metal wall of a hangar. It took us about 20 minutes to find this one. But there was an expert among us. When the official said "Go," someone said, "There goes Bonnie!" Bonnie Crystal, KQ6XA, is one of the best fox hunters in the area. She was off at a dead run waving her three-element tape measure Yagi from side to side. She found the fox in less than five minutes! That officially ended the fox hunts — but not for long. Bonnie wanted to have some fun, so she placed her own fox and let the hunters take their chances. Unlike the previous foxes, this one was only transmitting for 12 seconds every minute. Not easy to find. Once again, Dale and I teamed up to find this one. We were the second team to find it, and Bonnie certainly did a good job of hiding it.

All too soon, it was time to pack up the booth and load it aboard "Worldradio 1" (my pickup truck) for the drive back to Sacramento.

If you are in the area, each of these conventions is educational as well as entertaining and is well worth attending. The next ARRL Southwest Division convention will be in Scottsdale, Arizona, so stay tuned for details. ☺

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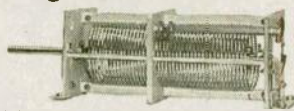
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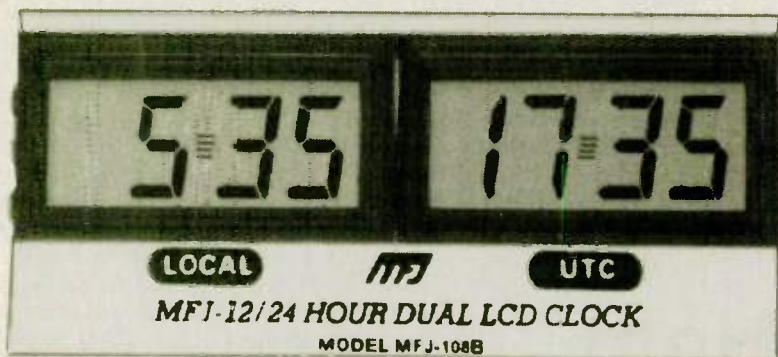
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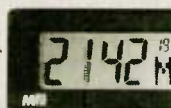
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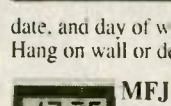
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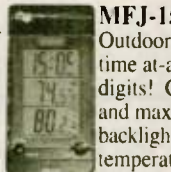
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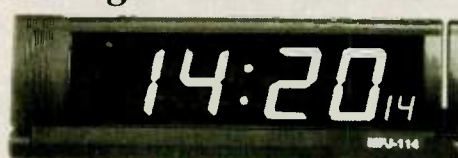
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The battle of the Hams

Bill Leonard, W2SKE (SK)

This article originally appeared in Sports Illustrated, 30 June 1958 and is reprinted here by permission of Sports Illustrated and Norma Leonard, through the assistance of Larry Serra, N6AZE.

On the night of 07 February 1958, a few moments before 2 a.m., Canadian Army Sergeant Elvin Veale of the U.N. Emergency Force stepped out of his quarters into the bitter night air of the Gaza Strip. He was tense, excited, braced for the job ahead. At the same moment, in a Tokyo suburb, Haruo Yoneda, a Japanese TV executive, pushed back a final cup of breakfast tea and disappeared into the tiny room from which he emerged 48 hours later, glassy with exhaustion, and utterly happy.

Sergeant Veale, Mr. Yoneda, Ludwik Kloucek of the Mongolian People's Republic, Empty in Johannesburg, Eva and Alex in Casablanca, Nose in Hawaii, this reporter and a multitude of others, from Pitcairn Island to Punxsutawney, PA., were about to begin play in the oddest, toughest and by any standards the most international of all sporting competitions. This was the start of the 24th annual DX contest for radio amateurs of the world, sponsored by the American Radio Relay League.

DX means distance in the abbreviated jargon of Hams, (Amateur Radio operators), and the object of a DX contest is for one station to talk to as many other stations in as many other places as possible in a prescribed length of time. The Grand National of the many DX contests sponsored annually by clubs, organizations and magazines in dozens of countries (including Russia) is the ARRL's affair. There are more American Hams (140,000) than in all the rest of the world combined (60,000), and in this biggest of electronic scrambles operators in the U.S. and Canada compete against

each other and talk only to foreign stations. Overseas amateurs contact only Americans and Canadians.

It takes about six months before logs, sent from the six continents, can be tabulated and checked. So this year's winners won't be officially known until the results are published in an early autumn issue of *QST*, the official magazine of Amateur Radio. But on the

"Ham radio is a passion"

basis of claimed scores, still subject to cross-checking, George Morrow, W8BKP, of Washingtonville, Ohio, and Robert Cheek, W3LOE, of Catonsville, MD., may be the U.S. high scorers for voice and code respectively. Outside the U.S. Katashi Nose, KH6IJ, of Hawaii swept both the voice and code contests for the first time ever.

These, and the other winners in foreign countries and various sections of the United States and Canada, cart away no cash or golden wassail cups. Certificates (suitable for framing — but barely) are the only visible rewards of this tense and exhausting competition. The thrills are not in the prizes or the honors but in a kind of fish-and-hunt excitement, with a voice 6,000 miles away in Rarotonga or Rio de Oro as the quarry.

Depending on just how serious he

is on the subject, the DX contest man will not only kill himself in a contest, but he will spend the better part of a year getting ready for the exquisite torture of 48 hours of almost continuous operating. He will plan, assemble and erect, usually at considerable cost and occasional risk of limb, an endless succession of antennas, designed to make his station sound just a little louder in Minsk than the fellow who beat him out last year. He will memorize (if he doesn't know them all to begin with) the names and call-letter prefixes of every "country" in the world (there are nearly 300 "countries," for Hams count many islands and possessions as well as motherlands). He probably has written or talked previously on the air with a hundred Hams half a world away arranging crucial schedules for the contest period. He has experimented with diet and sleep habits, stay-awake pills and coffee strengths and has literally gone into training for the contest ordeal.

He does all these things and, in addition, takes a lot of perfectly sensible abuse from what are laughingly referred to as loved ones, because Ham radio in general, and a DX contest in particular, is more fun than beating Yale. It may indeed be true that while golf is a game, bridge a hobby and girls an avocation — Ham radio is a passion. Like most passions, it is pretty much a mystery to those who are not in love.

Amateur Radio, like the airplane, is no longer a crude Kitty Hawk baby. Once it did take a garage full of fairly frightening equipment to say almost nothing to almost nobody almost no distance away. And it took an odd breed of nose-in-the-formula duck to master the intricacies of the spark gaps, tickler coils and reflex audions, to say noth-

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couple of thousand Hams have this one, and a handful have cards from 275 countries, which are almost all there are. Another award (issued by the Ham magazine *CQ*) divides the world up into 40 artificial zones, and the trick is to get cards from Hams in all of them. Zone 23 is mostly tundra and Tibet, and Hams there are as rare as centerfielders. Robert Ford, an R.A.F. radio operator, put Zone 23 on the map, operating from a monastery for a few months eight years ago. Then he was captured by the Communists and became famous as a man who survived five years of attempted brainwashing and Red torture. When he was released in Hong Kong three years ago, the first Westerner to greet him was a British colonel. The officer was a Ham first and an Englishman second. He threw his arms around Ford and cried, "Thank God you're alive, Bob. I've been sweating out your QSL card for six and a half years."

Some Hams concentrate on message handling (two New Jersey high school boys have handled over 1,500 telephone patches — relays — for our Antarctica base personnel), others get their kicks out of Civil Defense work and still others use their sets only to keep in touch with one or two friends who are also Hams.

Just as strangers almost always start to converse in generalities, often inanities, so do Hams. The wonder is — and this is the secret thrill of the game — that you can talk at all, that the little black box you built yourself puts your voice and your mind's eye into the home and the consciousness of a human being who may be a missionary in the Congo, and undertaker in Sweden or a school-boy in Uruguay. Whoever he is you will call him by his first name, even if — and this has happened countless times — you are an Air Force mechanic and the other Ham is a four-star general. You will probably not know, and if you do you won't care,

whether the lad with the outstanding signal on the high end of 20 Meters is tall or short, black or white, Democrat or Republican, Jew or Gentile. And any Ham can tell you something about the meaning, or lack of it, of national boundaries. The chances are the fellow he likes to talk to most lives a day's flight and a visa away. Through radio they are in his "shack" daily.

To this aficionado, who has been hamming for just a quarter century, and whose shacks have included an airplane over Addis Ababa, a chicken coop in Vermont, a movie house on Broadway and a hotel balcony in Haiti, the Ham DX contest is the hobby at its ziestiest. The big one just concluded embraced four weekends in February and March — two weekends of 48 hours each for voice operators, two for CW (code) men. There is no law, except common sense, preventing a single operator from working all 48 hours all four weekends. Indeed the Hawaiian school teacher named Katashi Nose, whose call is KH6JJ, who is this year's champion, regularly does just that. Along with a Virginian (Vic Clark, W4KFC), Nose is just about the best all-round contest man. He builds his own equipment, including a set of huge antennas on towers he raised and climbs himself. He is equally adept at key or microphone. His endurance seems endless. Favored with a location comparatively close to the U.S., he regularly exchanges contest serial numbers and reports with 3,000 U.S. Hams in a single competition. He and Clark, year in and year out, are among the top scorers in the world.

The toughest grind is going it alone. The ARRL rules are very strict about single-operator participation. No one else may assist you in any way, either in keeping logs or repairing equipment and certainly not in touching the key or the mike. There is not much more than the honor system to support the operational rules, although there is a log check on contacts.

A milder version of most DX contest hamming, including this year's ARRL

affair, is so-called multi-operator participation. Here, a group of Hams, prizing sleep more than honor, will get together and take turns operating one or more transmitters at a single chosen station. This is equivalent to joining a relay team, instead of going the mile alone. It's lots of fun, but hardly as demanding.


Perhaps the most elaborate multi-operator station extant is owned by Hazard (Buz) Reeves, K2GL, a superb technician, whose electronic know-how has paid off handsomely in business. He is president of half a dozen successful companies, all with radio overtones. A sizable section of his Tuxedo Park, NY, hilltop mansion and surrounding grounds is devoted to a Ham station deluxe. Dominating the landscape are two towers, loaded with antennas, both over 100 feet high. The antennas on the towers rotate — squirting the radio signals in favored directions.

The shack is a 30-by-35 upstairs room, dominated by three 1,000-watt transmitters, three top-quality receivers, a room-long workbench, tools by the hundreds, a tape recorder and special operating chairs designed for minimum back strain, in one of which this particular operator collapsed as utterly as if he had stopped a Robinson left hook, at the end of contests in the years when he used to go it all alone.

It was in this luxurious setup that we shared this year's ARRL contest. Reeves flew up from Florida to join six others for one weekend of high-speed contest fun. Reeves does little operating himself. His kicks come from keeping the maze of complicated equipment in operation. Most of the talking was done by Dick Dorrance, a New York advertising executive; Fred Capossela Jr., son of the noted track announcer; John Ryan, an Anaconda Copper heir, who regularly flies across the continent to operate from K2GL because he considers it the best station in the world; Gene Kern, chief of the New York office of the Voice of America; and David Rosen, a young radio announcer.

In the first half hour of the contest we touched all continents. Signals churned into receivers from Japan, New Zealand, Morocco, Portugal, Argentina and nearly every other nook that man has wired for electricity. Contest contacts are quick — an exchange of identifying

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


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See *Worldradio*, Oct. 1994 Issue.

reports, a time check, serial numbers, hello, goodbye, that's all. But there was time to find out that one of our first contacts was operating from a 1953 station wagon in the Argentine pampas.

Four hours on, four off was our schedule, and before the next day had gone we had worked a rare station in Sarawak, British North Borneo. One of the most unusual of all countries is tiny Kermadec Island, 500 miles off the coast of New Zealand. There is only one Ham there, and he operates on a band that usually carries just a few hundred miles. But with a lot of effort and the help of a New Zealand amateur, we made contact with him.

A DX contest score is arrived at by multiplying the number of contacts by the number of countries, working each station only once. But as you operate on

a different band of frequencies you can contact the same station all over again for another multiplier. It's quite a trick to catch the same overseas station on all HF bands; in fact, not two stations in an average year manage to swing it. But luck was with us, and in a single four-hour period we talked to Bill Vrooman, HH2Z, who runs Haiti's International Country Club resort, on all seven bands.

The thrills piled up, but so did the problems. Sunday morning the rotation mechanism on one of the towers jammed. We operated at something like half-effectiveness, while Buz fixed it in two hectic hours. Toward the end of the contest a power transformer went west. John Ryan figured out a way to make a replacement spare do the job. Somewhere along the line we were inspired to fashion an extra

antenna on the off-chance that it might be useful on a little-used frequency. It wasn't.

At the end of the weekend we had exchanged reports with 600-odd stations in exactly 100 countries, a creditable score, considering we had only participated one weekend out of two. It was far from a record. We had simply had our fun — enough to tire but not exhaust.

But around the world, Veale in the Gaza Strip, Yoneda in Japan, Nose in Hawaii, and a hundred others who had gone it alone staggered red-eyed to their sacks, surfeited with DX, the voices of the whole earth ringing in their battered ears, vowing they would never go through anything like that again. And they won't. Not until next year — when it's DX contest time again.

What's in a name?

Marshall King, N7PIP

Get a kick out of the teasing we sometimes receive when the name of our hobby is mentioned: Amateur Radio. The good-natured comment we occasionally hear is "AMATEUR radio? Why is it always amateur? How long does it take to become professional?"

Of course we take the comment for what it is... a friendly jibe on the use of words. In truth, everyone knows that Amateur Radio operators, sometimes called Hams, are forever amateurs in that they do not, cannot, accept money or any other remuneration for their practice of the radio art.

But the word "amateur" stops here, for the work they have done during the twentieth century in the investigation of radio waves, and how the public can best benefit from them, is most professional indeed. Thanks in part

to Hams, the use of radio waves is no longer restricted to hunting for faint signals picked up by a galena crystal. Today it also means we have telegraphy, telemetry, television, moon bounce, radio telegrams, satellite relays, global positioning and a host of other applications using invisible signals sent through space.

But probably the most widespread enjoyment of the hobby, outside of experimentation in home workshops, lies in its application in community events. Here on Whidbey Island (IOTA NA-065) just off the coast of Seattle, well over 100 Hams bask in the enjoyment of their being amateurs forever.

In the annual Holland Happenings parade Whidbey Island Hams are situated along the parade route to assist city officials in starting line changes, crowd control, and calls for medical assistance if needed. Each year the Water Festival on Penn Cove benefits

from the use of Ham radio operators in keeping officials informed of what's happening in areas beyond their view. The same goes for the annual bicycle Triathlon along State Highway 20 and the summertime Pony Trials in the mid-island community of Coupeville.

Emergency services?

Whidbey Island Hams have long considered the American Red Cross their prime agency of support so that, when things go down, a plan is in effect whereby the 26 Red Cross chapters throughout the state are each contacted by a local amateur radio operator. This system then takes local Red Cross traffic from VHF up to an HF backbone for statewide action if required.

What's in a name? If the name is "amateur" it means the activity, whether it be music superbly played or radio operation creatively applied, comes from the heart, not from a job description. Is there a better guarantee of professionalism?

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Awards



Contact All Time Zones

To help commemorate 25 years of *Worldradio*, we announced an award known as "Contact All Time Zones" (CATZ).

• Rules

The start date for valid contacts is 01 July 1996 at 0000Z.

The world is divided into 24 time zones. Each time zone is 15 degrees wide. For the sake of this award, half-hourly zones and out-of-zone artificial time changes will be ignored.

This award is based on the true 15 degrees each, world map 24 time zones.

The applying station must have one (two-way) contact on Amateur Radio allocated frequencies with a station in each of the world's 24 time zones. Contact with one's own nation does not count.

The operator applying for the award must have made all 24 contacts from a location within the same country.

The award may be endorsed as the applicant wishes in regard to band and/or modes.

• Application

The applying radio operator must be in possession of 24 QSL cards, one from each of the time zones.

A list shall be made showing each

contact's call sign, date, band, mode and the time zone starting with the prime meridian (0°) and moving eastward.

There is a fee of \$5 to cover the cost and mailing of the 8 x 10 certificate (mailed unfolded).

It is not necessary to mail your QSL cards to *Worldradio*. Send a statement signed by two other licensed radio amateurs (General Class or above) that they have inspected and verified the required QSL cards.

Address applications to CATZ Award, *Worldradio*, 2120 28th St., Sacramento, CA 95818.

Recipients of the CATZ award will be announced in the *Worldradio* DX column.

Special Events

U.S.S. ARIZONA

The East Valley Amateur Radio Group will operate WA7USA, 07 December 1500 - 2400Z to commemorate the U.S. Navy battleship USS Arizona. Suggested frequencies are 14.240, 21.340 and 28.340 MHz. Stations making contact with WA7USA may request a certificate by sending a QSL card and a 9 X 12 SASE to EVARG, 3464 E. Carol Ave. Mesa, AZ 85204-3245.

PEARL HARBOR DAY

The Historical Electronics Museum ARC will operate W2W as a special event station commemorating the attack on Pearl Harbor on 07 December 1941. W2W will operate on 04 & 05 December 1400-2200Z; CW and SSB on the 40, 20 and 15-meter bands in the Novice and General segments. An 8 X 10 certificate featuring the

museum's Pearl Harbor radar antenna is available by sending a QSL card and a 55¢ stamp to: HEMARC W2W, Historical Electronics Museum, MS 4015, P.O. Box 736, Baltimore, MD 21203.

100TH ANNUAL ARMY/NAVY GAME

Special event station N5A will be operating from the U.S. Naval Academy in Annapolis, MD during the 100th annual Army/Navy football game. The station will be on the air from 0700 to about 1300 UTC (end of the game) 03 December. Suggested frequencies are 7.240, 14.250, 21.350 and 28.450 MHz. A certificate is available for a SASE and QSL sent to: Mike Waranis, 422 Halsey Rd. Annapolis, MD 21401. For more information, e-mail honor@annapolis.net

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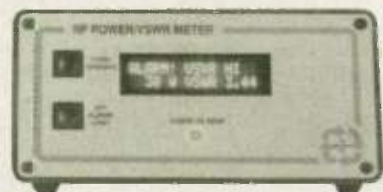
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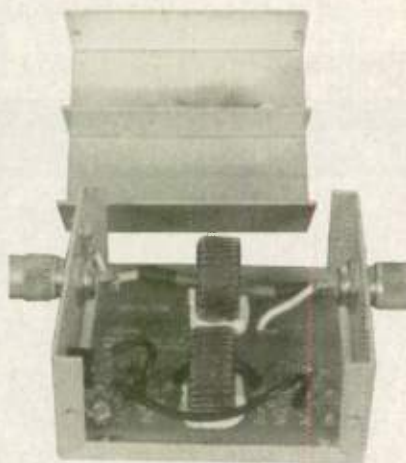
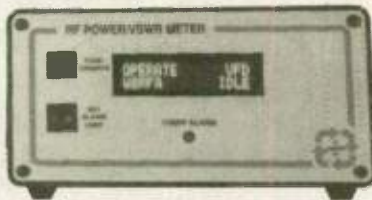
We can even *personalize* your wattmeter with your callsign (11 characters maximum). The Vanity Option is supplied as a separate chip (you keep the original), so your VFD can still be used by someone else!

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You can set the VFD to tell you if your VSWR has exceeded a preset limit. A bright red LED tells you if you have exceeded 1.5:1, 2.0:1, 2.5:1 or 3.0:1 (the default). If you have installed the optional relay, you can disable your amplifier to prevent damage to your system.



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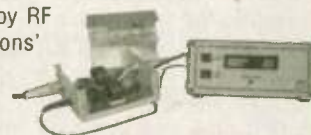
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The VFD is shipped with a display unit, the P-3000-D sensor and a 12 VDC power cable. This product is covered by RF Applications' standard two year warranty.



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Letters to the Editor

QSLs

As a "DX station" I'm often bombarded with QSL requests and there is always a large percentage who do not include SASE's.

As "Buro" costs continue to rise, this adds an extra expense to my own DX chasing as I always try to respond to non-SASE cards via the Bureau.

Perhaps it's time to add 'QSL etiquette' to the FCC test exams, club meetings and local coffee shop gatherings.

**Rick Gardner, WH6LU
Kurtistown, HI**

Women as amateurs

In response to that of Paul Courson WA3VJB. Women Hams. If

Paul has been licensed for 30 years and never has heard of a woman who is licensed but was not introduced to Amateur Radio by a boyfriend or other family member, where has he been? All one has to do is read the YL columns.

But, the next statement is disturbing where he thinks we should elect female leadership for a change. Gee, Paul, why don't you check page 10 in *QST* for the Board of Directors, and page 12 for Section Managers? They are elected League Officials.

You know there is no quota to be met. Women don't have to be represented if they don't care to. And as you are a subscriber to *Worldradio* just look at how many

women editors there have been (Rick doesn't count).

**John F.W. Minke III, N6JM
Carmichael, CA**

Thanks, Armond...

I want you to know that I really appreciate your magazine and the lifetime of energy you have devoted to it and what it and Amateur Radio stands for. I was recently recounting how many years you have been putting together *Worldradio* and you are to be honored and commended for your efforts and dedication. Thanks again and keep up the good work.

**Mike Staal, K6MYC
Fresno, CA**

Silent Keys

JAMES WHITE JR. WS6K

Retired educator and administrator, Jim White Jr., died 10 October in Sacramento, California of complications following surgery.

Jim spent his entire career working in the Washington School District in West Sacramento, CA. He taught various grades and served as principal at Bryte and Alyce Norman School.

After retiring, Jim jumped into the world of Amateur Radio. He was a member of the Sacramento Amateur Radio club and served as president of the club for two terms. He was a member of the board of directors for the last 14 years.

Jim volunteered for numerous projects, including maintaining and running the emergency radio system for the Sacramento Medical Foundation Blood Center. When he wasn't busy with other projects, Jim spent his days as a volunteer maintenance worker at a community center not far from his home. He especially enjoyed taking care of the stray cats that lived at the center, going so far as to delay opening Christmas presents until he had gone to the center to feed the cats.

During Field Day, Jim always made the journey to the club's location and

operated the CW station. He occasionally operated voice but preferred using his keyer to help in the overall efforts of the club. We were always trading jokes, and his sense of humor was as big as his heart. His fist, signing W6AK, will be missed by all that knew him. — *WF6O*

ERNEST PAPPENFUS, K6EZ

A major figure in the development of Collins Amateur Radio gear. Ernie Pappenfus, K6EZ (ex-WØSYF; WB6LOH), of Temecula, California, died 14 August. He was 81. During his years at Collins in the 1940s, 1950s and 1960s, Pappenfus directed development of such products as the famous S-Line and the 30L-1. An ARRL member, Pappenfus co-authored the book "Single Sideband Principles and Circuits", published in 1964, and wrote three articles for *QST* in the 1950s and 1960s. — *ND6N, Electric Radio, ARRL Letter*

JEAN SHEPERD, K2ORS

Veteran radio broadcaster, Jean Sheperd, K2ORS, died 16 October at a hospital near his home in Sanibel, Florida.

One of the originators of "talk" radio, Jean had an overnight show at WOR in New York. His show consisted of tales from his boyhood and his time spent in the U.S. Army. One of his most famous works was his story "A Christmas Story" featuring Ralphie Parker as a young boy fixated on getting a Red Ryder BB Rifle for Christmas. His tale was turned into a movie in 1983, and remains a holiday classic. His famous voice can be heard narrating the movie.

Jean was also an author of magazine articles and several books. He also produced several programs for the PBS.

His Amateur Radio activities were centered on HF SSB and occasional 2-meter contacts. — *ARRL*

QUICK TALK

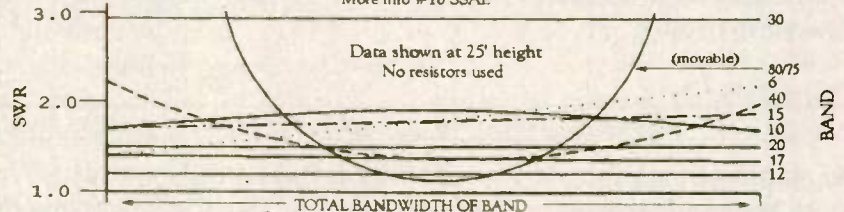
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Worldradio's Friends' Day

Every year, on the last weekend in June, it's the ARRL's great Field Day. Now, the first Saturday/Sunday in June, it's *Worldradio's* Annual Friends' Day.

From your letters, and in-person meetings at conventions, we do believe that *Worldradio* subscribers are the very finest Amateur Radio operators. They're very friendly.

You should meet each other! Great people should get together. Run into old friends, make new friends.

Start: 1800Z Saturday 03 June 2000

Stop: 1800Z Sunday 04 June 2000

Maximum time allowed 16 hours.

Bands: All HF (No WARC bands) and VHF bands. Look for CW contacts on the half-hour marks.

Call: CQ, WR.

Exchange: First Name and the first three numbers of your ZIP Code. Canadians give the province. Non-North Americans, give your city.

Scoring: Two points for each completed 2-way contact. Multiplier is the total number of different ZIP codes and provinces and countries. Stations may be worked on different bands and modes. (CW contacts must be made in CW portions of the band.)

Awards: Certificates will be awarded to the top scorer in each ZIP Code (first three-number designation), Canadian province and country. Also an Honorable Mention certificate will be awarded to all others submitting logs. The certificates will be 8-1/2 x 11 and available for \$1 and a No.10 SASE.

QRP stations, 5W CW, 10W SSB, will be listed in their own category.

Deadline: Entries must be received by 06 July 2000. Results will be printed in *Worldradio* as soon as possible. (Volunteers in the Sacramento area to help with the entries will be greatly appreciated.)

Power: As a possible tune-up for Field Day any station operating from any non-plug-in-the-wall power source may add 100 points to their score.

So as to reduce RF pollution in North America, power is restricted to 150 Watts or less. Except non-North American stations may run up to their legal limit to help facilitate intercontinental contacts.

Non-subscriber contacts: You might not get too many because with the contest on Saturday, non-subscribers will be taking their weekly bath that day. Saturday night they'll be drunk.

However, if someone hears you calling "CQ WR" asks what it is, tell him it's the QSO Party for *Worldradio* subscribers. If he asks, Can I give you a point? Say, Yes, Please give and get the exchange and log him for 1 point, no multiplier.

Log entries will only be accepted from *Worldradio* subscribers.

Logs: Just send in the total number of contacts, number of multipliers, total points, and off times.

We don't need all the contact logs because *Worldradio* subscribers don't cheat! On the off-chance that there might be one, if he wants to hang a certificate on the wall that shouts Liar, Liar that's his problem.

Any suggestions for this annual gathering of the Good Guys and Gals will receive careful consideration from the Contest Committee.

Note: Since this has the potential (except for Field Day) of being the largest on-the-air event, efforts should be made to minimize interference to non-contest stations. Also, while it may appear as a contest, we do encourage chatting in the contacts. And, we expect that when you are on the air some friend may say something like, I always thought you were brilliant, but hearing you call CQ WR proves it even more.

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- ADI-600x (5w NiMH) 12.0v 1000mAh **\$39.95**

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- BC-601d Rapid/Trickle Charger **\$54.95**

For ICOM IC-W21A / 2GXAT / V21AT (Black or Gray):

- BP-131xh (NiMH) 7.2v 1500mAh **\$39.95**
- BP-132s (5w NiMH) 12.0v 1500mAh **\$49.95**

For ICOM IC-2SAT / W2A / 3SAT / 4SA etc.:

- BP-83xh NiMH pk. 7.2v 1500mAh **\$39.95**
- BP-84x NiMH pk. 7.2v 1700mAh **\$43.95**
- BC-79A Rapid/Trickle Charger **\$52.95**

For ICOM 02AT etc. & Radio Shack HTX-202 / 404:

- BP-8h pack 8.4v 1400mAh **\$32.95**
- BP-202s pk (HTX-202) 7.2v 1400mAh **\$29.95**
- IC-8 8-Cell AA NiCd/Alkaline Case **\$15.95**
- BC-350 Rapid Charger **\$49.95**

For KENWOOD TH-79A / 42A / 22A:

- PB-33xh pk.(NiMH) 6.0v 2000mAh **\$39.95**
- PB-34xh pack (5w) 9.6v 1000mAh **\$39.95**

For KENWOOD TH-78 / 48 / 28 / 27:

- PB-13x (original size NiMH) 7.2v 1200mAh **\$34.95**
- PB-13xh pk (NiMH) 7.2v 1500mAh **\$39.95**

For KENWOOD TH-77, 75, 55, 46, 45, 26, 25:

- PB-6X (NiMH w/chg pkg) 7.2v 1200mAh **\$34.95**

For YAESU FT-50R / 40R / 10R:

- FNB-47xh (NiMH) 7.2v 1800mAh **\$49.95**
- FNB-41xh (5w NiMH) 9.6v 1000mAh **\$49.95**
- BC-601c Rapid/Trickle Charger **\$54.95**

For YAESU FT-51R / 41R / 11R:

- FNB-33xh pk (NiMH) 4.8v 2000mAh **\$39.95**
- FNB-38 pk (5W) 9.6v 700mAh **\$39.95**
- BC-601b Rapid/Trickle Charger **\$54.95**

For YAESU FT-530 / 416 / 816 / 76 / 26:

- FNB-25x pack (NiMH) 7.2v 1000mAh **\$28.95**
- FNB-26x pack (NiMH) 7.2v 1500mAh **\$32.95**
- FNB-27x (5w NiMH) 12.0v 1000mAh **\$45.95**
- BC-601a Rapid/Trickle Charger **\$54.95**

For YAESU FT-411 / 470 / 73 / 33 / 23:

- FNB-10 pack 7.2v 600mAh **\$20.95**
- FNB-11 pk. (5w) 12.0v 600mAh **\$24.95**
- FBA-10 6-Cell AA case **\$14.95**

Packs for ALINCO DJ-580 / 582 / 180 / 280:

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Station Appearance

Send *Worldradio* a picture of your shack and the staff will choose a winner to receive a free one-year subscription to *Worldradio*! Stations will be judged by neatness (wires tucked away, etc.) and accessibility of equipment. Monetary value of equipment is not a consideration.



Merle Bodine, KC70GU

At the heart of my system is a Kenwood TS-940S with an MC-60 microphone and SP-930 speaker. To the left is a Bentley 5" television, kept on with no audio to monitor TVI. At the extreme left is MFJ's 259 antenna analyzer sharing the compartment with the FCC rule book.

To the right of the TS-940S is a Kenwood SP-520 speaker for the Radio Shack PRO-2046 scanner on the top shelf. The HT is a Radio Shack HTX-404 (70 cm) powered by a Radio Shack three amp power supply.

At the extreme right is the 2-meter base station consisting of an Alinco DR-130 mobile powered by an Astron RS-12A. MFJ's 812B SWR/Wattmeter monitors the 2-meter output. A Radio Shack external speaker directs the audio to the operator.

In the center of the top shelf is an MFJ 949C antenna tuner controlling HF forward and reflected power. Two old Regency crystal operated scanners, a 10 channel and a 4 channel, monitor the state patrol and county sheriff's frequencies.

The Daiwa antenna switch is ready for any future antenna expansion. Currently the station utilizes a 10-meter and 20-meter dipole for HF and an attic mounted MFJ magnetic mount mobile vertical sitting on a 2 X 4 foot piece of sheet metal for a ground plane. No HF linear is used and contacts into Europe are frequent.

A 133 MHz PC sits on its own computer table with a printer at the right of the operating table. The operating table and compartment unit is "homebrew."

ALF sits between the Regency scanners to keep the operator company.

Amateur "Hi"



Ever had a funny or strange experience with Amateur Radio, on or off the air? If so, type it up (or print neatly) and send it to us for consideration in our monthly AMATEUR "HI" contest. You could win a free year's subscription to *Worldradio*!

I still can't count

David Block, KA0VCW

Back in my Novice days, 1986-87, knowing little about DX and nothing about QSL bureaus, I

heard what I thought was a J5 station, perhaps in the Caribbean. Not being able to count, I received a cordial and surprising "GM from Tokyo." After a very nice QSO, I QSL'd direct, and received a card from Tokyo. It's a card that I treasure. And now as a CW instructor for HandiHams, I afraid I still can't count as I recently logged an HH1 during a contest and was thrilled to received a card from a 5H1 in Tanzania.

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FT-100

This ultra-compact HF/VHF/UHF 100 Watt Transceiver provides SSB, CW, AM, FM and AFSK coverage of the HF, 6M, 2M and 70 CM bands. Features include 300 memory channels, built-in Electronic Memory Keyer, DSP, IF Shift, IF Noise Blanker, and CTCSS/DCS.



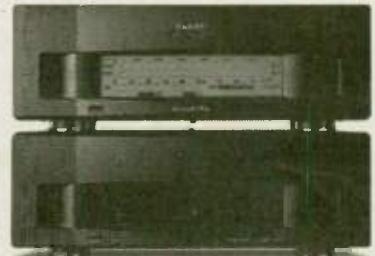
FT-840

Affordable yet feature filled, the FT-840 is an ideal travel-companion. It offers 160-10M TX with general coverage RX, 100 memory channels, DDS, CTCSS, Twin Band Stacking VFOs, and excellent receiver dynamic range.



FT-600

This compact 100 Watt HF Transceiver offers the utmost in operating simplicity. The MIL-STD rated FT-600 covers the 160-10M Amateur bands with General Coverage Receive, 100 memory channels, Direct Keypad Frequency Entry, and a front-mounted speaker.



VL-1000/VP-1000

The VL-1000 Quadra System is a Solid-State Linear Amplifier featuring four twin-MOSFET PA modules to produce 1000 Watts of clean power output on 160-15 Meters (500 Watts on 6M, modifiable for 12/10 meters). Included are an Automatic Antenna tuner, 2 Input and 4 Output Antenna Jacks, and extensive status displays on the multi-function LCD.

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W-100-N

No applications for our Worked 100 Nations Award were received during the month of September. We did receive a note from an individual whose application was rejected with the following comment, "I would suggest that you make reference to the W100N definition of a nation, as I am sure that there are others besides myself who have never heard of it. Where can we get it?"

The list of rules and the definition of a nation is available directly from *Worldradio* for a self-addressed, stamped (with 55 cents postage) business sized envelope. In addition you will also receive application forms that include the nations valid for this award. You can also check the *Worldradio* website.

This individual also went on to justify why he used the DXCC with "Those of us who operate on low power have to take the DX as we can get it, not like the guys with the big guns, etc." I think you will find that most applicants for this award do run low power. Look at the scores for those low-power entries in the CQ and ARRL DX contests. With that attitude no wonder we have those DX listmasters on 14.257 MHz or wherever they hang out. The individual who wrote this has a W7 call with a three-letter suffix. The call is not a reissued vanity call. So, he is not new to the game.

And, while we are on the subject, the present version of this award was

created over 20 years ago. Many of those listed are not really a nation at all. An example would be St. Pierre et Miquelon, off the coast of Canada's Newfoundland. This one is a department of France and should be counted as such, even though it is not in Europe. This is like Hawaii, which is not in North America. However, this change will not be overnight, so if you are considering applying under the old rules you had better do it now.

CATZ

The following DXer has been awarded his certificate for *Worldradio's* CATZ, Contact All Time Zones:

**13. Russell W. Young WA2VQV
23 September 1999**

All contacts were made using CW and his certificate has been endorsed as such. His application was the best we have seen so far. Not only did he list his contacts in order of 15 degree segments (i.e. 0 to 15E, 15 to 30E, etc.), he included the name of the entity of the contact plus the approximate coordinates. This is extremely helpful in reviewing the application.

Annobon Island (3C)

The 3CØR DXpedition to Annobon Island (AF-039) warmed the hearts of many a deserving DXer. On Tuesday, 14 September, the team left Sao Tome Island after being delayed by a day due to rough seas. But the 36-hour journey, according to Elmo Coll, EA5BYP, was extremely rough. A load displacement caused an engine failure and they had to be towed by a merchant ship. All of the team members were seasick and could not eat for 48 hours.

They arrived on the island the 16th and were soon operating with Elmo on 20 Meters SSB at 14.195 MHz, followed by an operation by Vic Mira, EA5YN,

on 15 Meters CW on 21.025 MHz. They continued to operate until about 0100 UTC and quit for much needed sleep. Any contacts prior to 2000 UTC on the day of arrival were the work of Slim.

They were not without problems. Upon arrival two Cushcraft MA5B antennas were installed and they had started a five-hour operation. A big thunderstorm with heavy lightning hit them which damaged one of the three laptop computers and the network connection on all of them.

Four stations were to have operated around the clock. After the first week of operation the team collected over 20,000 contacts.

In case you missed the chance to work this one, fear not — they have received approval from the authorities to return for another operation from the island. With that in mind the team left the generators and gear at the base.

Malawi (7Q)

Edwin Musto, ZS5BBO, anticipates operating from the shores of Lake Malawi this December between the 19th and the 26th. As of this writing no call sign has been issued but it could be either 7Q7BB or 7Q7BO. Ed operates SSB only and all operations will be 10 through 20 Meters.

Rwanda (9X)

The *Ohio/Penn DX Bulletin* notes that the Russian Amateur Radio Emergency Service will once again activate a station in Rwanda operated by Vladimir Legoshin, 9X/RE3A. He should be on about now and should be active for a couple of months.

Chad (TT)

425 DX News notes that Max Mucci, 18NHJ, along with three other Italian DXers: Luciano Nanni, IK8HBA; Giovanni Desiato, IK8TOA; and Elvira Simoncini, IV3FSG, will be active from Chad for two weeks in late November and early December. During the first week they will concentrate on the lower bands with SSB and RTTY. CW activity will begin with Max entering the CQ Worldwide DX Contest. Six meters is also planned.

The team will be based at the Catholic Mission at Core, where they will repair the existing station of TT8MS. In addition they will tour the area of the other seven missions in order to set up radio stations for local communica-

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Chagos (VQ9)

Rick Dorsch, NE8Z, says that his cousin, Ron Marra, AA5DX, will be returning to Diego Garcia Island (AF-006) on 27 October and should be active for the next 4 months signing with VQ9DX. He will mainly be active on 80 and 160 Meters CW, plus some CW work on 6 Meters.

Laos (XW)

Hiroo Yonezuka, JA2EZD, is currently active from Vientiane in Laos signing with XW2A. According to *The Daily DX* he plans to be there through the end of the year. He also requests that when sending for a direct QSL to please not send any U.S. dollar bills nor send them via Registered Mail. I might add here that he does not mean no funds for postage return. Use an IRC. Or better yet to be on the safe side send your request via the JARL bureau, but be prepared to wait a little bit.

East Timor

The independence issue for East Timor from Indonesia was voted on in early September with 344,580 residents (78.5%) in favor of the split. The issue was also a violent one with at least four local U.N. workers being killed by anti-independence forces. With this in mind I doubt that we are going to see a new entity soon.

There were reports of a station signing with CR8FMX call leading some older misinformed DXers to think they were working East Timor for a new one. No, people! Independence does not mean it reverts back to Portugal! If you worked this one you can QSL via CT1FMX.

Later in the month several other CR8 calls came on the bands, such as CR8A. All are Portuguese stations using the former Portuguese Timor prefix. The claimed purpose of the use was in order to help the Timorese people in this difficult time.

IOTA

Another Chinese DXpedition was planned for early September with the support of the Chinese Radio Sports Association, the Beijing DX Club, and the Island Radio Expedition Foundation. This was the Xisha Archipelago (Parcel Islands) which has an unassigned IOTA reference. The call was BI7Y for five days between 07 and 13 September, but they were delayed for about a week. They finally arrived on the island around 19 September and operated for about 48 hours with

enough contacts to have a reference number of AS-143 assigned to the island group. Between the operation the individual operators did operate from Hainan Island (AS-094) using their personal calls. QSL requests for BI7Y should be sent via BD7JA.

The following IOTA operations have provided acceptable validation material to the IOTA committee:

AS-056 JA6GXX	Danjo Archipelago	Apr -Aug 1999
AS-064 UEØXZZ	Karaquinskiy Island	June 1999
AS-142 UAØZY/P	Kambalny Island	July 1999
EU-094 TM5G	Glenan Islands	July 1999
EU-074 F5PFT/P	Brehat Island	May 1999
EU-074 F5SNY/P	Brehat Island	May 1999
EU-105 F5PFT/P	Batz Island	May 1999
EU-105 F5SNY/P	Batz Island	May 1999
EU-107 F/GØGRC	Les Sept Iles	June 1999
EU-157 F5SNY/P	Cezembre Island	May 1999
NA-173 VYØØ	Grass Island	June-July 1999
OC-104 YJØAXC	Banks Islands	Aug 1999
OC-135 P29BI	Bougainville Is.	Aug 1999
OC-159 ZK1MGS	Mangaia Island	Jul-Aug 1999
OC-164 VK6DDU/P	Rottneat Island	July 1999
OC-229 VK8AN/8	S. Goulburn Is.	Aug 1999
OC-229 VK8PW/8	S. Goulburn Is.	Aug 1999

The IOTA committee is waiting for validation material from a few other operations, including that of KL1SLE last April from St. Lawrence Island (NA-040). Note that checkpoints are not authorized to credit QSL cards for operations from which validation material is still waiting.

Now here is our selection of IOTA activity for the month of September through the 25th.

AF-033 S79GI	Desroches Island	01-14 Sep
AF-066 C91RF/P	Inhaca Island	18-22 Sep
AN-006 EM1LV	Galindez Island	20 Sep
AN-006 EM1U	Galindez Island	01-20 Sep
AN-015 8J1RL	Ingul Island	02-24 Sep
AS-015 9M2TO	Pinang Island	02-25 Sep
AS-024 JR6USF/6	Yonaguni Island	04 Sep
AS-026 HL4HLD	Cheju Island	03-14 Sep
AS-028 UAØQBA	Kotelny Island	06 Sep
AS-046 9M8DX/2	Tioman Island	06-08 Sep
AS-053 HSØ/IK4MRH	Phuket Island	03-24 Sep
AS-059 UAØIAS/Ø	Zavyalova Island	06-09 Sep
AS-073 9M2TO/P	Rodang Island	19 Sep
AS-094 BA1DU/7	Hainan Island	06-17 Sep
AS-094 BD7NQ/7	Hainan Island	10-11 Sep
AS-103 BV9AAC	Penghu Island	24 Sep
AS-108 ØD5RAL	Ramkin Island	24-25 Sep
AS-117 J13DST/3	Awajishima	04-05 Sep
AS-136 BD4ED/4	Chong Ming Island	01-25 Sep
AS-143 BI7Y	Xisha Archipelago	19-21 Sep
EU-008 GS3EEO/P	Crowlin Island	11-13 Sep
EU-008 GSØUTT/P	Isle of Skye	01 Sep
EU-008 GMØPNS	Pabbay Island	20 Sep
EU-009 GMØHTG	Orkney Islands	05 Sep
EU-009 GM3POI	Orkney Islands	08-20 Sep
EU-009 GB2OWM	Orkney Islands	04-08 Sep
EU-009 GM3VLB/M	Orkney Islands	24-25 Sep
EU-010 GM3JJJ	Isle of Lewis	12-13 Sep
EU-016 9A5VK/P	Kolocep Island	18 Sep
EU-016 9A5V/P	Kolocep Island	17-19 Sep
EU-016 9A4W	Brac Island	08 Sep
EU-016 9A5VM/P	Kolocep Island	17-19 Sep
EU-016 9A5VM/P	Lopud Island	24-25 Sep
EU-017 ID9/IN3XUG	Stromboli Island	18-22 Sep
EU-017 ID9/1SNW	Eolie Islands	01-03 Sep
EU-028 IA5/IKØYUJ	Isola del Giglio	02-08 Sep
EU-028 IA5/IK8IØPI	Isola del Giglio	23-25 Sep

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EU-031	IC8PSO	Ischia Island	13-19 Sep
EU-036	LA4XGA	Frei Island	09-25 Sep
EU-042	DK8OL	Isle of Sylt	19 Sep
EU-046	LA1CI	Ringvassoe Island	09-24 Sep
EU-047	DJ9IN	Norderney Island	02 Sep
EU-048	TM0G	Ile de Groix	10-22 Sep
EU-049	SV8CRI	Levos Island	01 Sep
EU-049	SV8DTL	Levos Island	01 Sep
EU-052	SV8/HA6NL/P	Korfu Island	01-07 Sep
EU-052	SV8/DL4JWU/P	Korfu Island	15-23 Sep
EU-052	SV8/HA6ZV/P	Korfu Island	02-06 Sep
EU-052	SV8/HA6PS/P	Korfu Island	02-07 Sep
EU-054	IF9/IT9PPG	Isola Favignana	02-03 Sep
EU-055	LA4C	Karmoy Island	04 Sep
EU-057	DL5KUD	Reugen Island	21-23 Sep
EU-060	SV0LR	Euboea Island	16-25 Sep
EU-060	SV1TP/P	Euboea Island	04-09 Sep
EU-060	SV1ENI/P	Euboea Island	04-25 Sep
EU-070	F/HK1TTD	Porquerolles Island	12 Sep
EU-072	SV8/DL8MCAN	Northern Sporades	22-25 Sep
EU-075	SV1TP/P	Poros Island	13-25 Sep
EU-081	FK6AS/P	San Marco Island	11 Sep
EU-100	TK/DJ5MX	Cericales Islands	21-25 Sep
EU-103	EU/G4WSB/P	Saltee Islands	04 Sep
EU-110	9A7K/P	Briioni Islands	05-07 Sep
EU-110	9A200B	Briioni Islands	01-08 Sep
EU-114	GP5KN	Sark Island	16-17 Sep
EU-120	G7RAU	Isle of Wight	06 Sep
EU-121	EJ8IM	Valencia Island	03 Sep
EU-123	GM3OFT	Iale of Hestan	04 Sep
EU-124	GW0UIH/P	Holy Island	03 Sep
EU-124	GW3XFA/P	Holy Island	03 Sep
EU-124	GW0MOI	Anglesey Island	09 Sep
EU-125	OZ/DL1EBR/P	Fano Island	19-24 Sep
EU-128	DJ2MX/P	Fehmarn Island	01-03 Sep
EU-131	IK3PQH	Lido Island	25 Sep
EU-133	RIASP	Kotlin Island	08-25 Sep
EU-136	9A7T/P	Rab Island	04 Sep
EU-136	9A/HA3HP/P	Pag Island	13-17 Sep
EU-136	9A4A	Pag Island	03 Sep
EU-165	IM0/S0LYN	Bocca Island	04-05 Sep
EU-169	ZA0IS	Sazan Island	24-25 Sep
NA-009	VY0/KR6MR	Parry Islands	23-25 Sep
NA-019	WL7EM	Kodiak Island	17 Sep
NA-031	KA3UNQ	Rhode Island group	13 Sep
NA-036	VE7IM	Vancouver Island	05-23 Sep
NA-036	VE7DXQ	Vancouver Island	06-11 Sep
NA-036	VE7TMO	Vancouver Island	05 Sep
NA-046	W1RQ/1	Massachusetts S.	01-03 Sep
NA-055	AA1KS	Moose Island	12 Sep
NA-057	AH6PN/HR6	Roatan Island	05-21 Sep
NA-059	NO7F/KL7	Unalaska Island	03-10 Sep
NA-064	AL7RB/P	Attu Island	16-22 Sep
NA-065	N6FD/7	Fidalgo Island	02-11 Sep
NA-089	N5VT	Chandeleur Islands	01 Sep
NA-110	AA4V/P	Isle of Palms	25 Sep
NA-128	VX2DX	Iles aux Coudes	17-20 Sep
NA-134	OX3LG	Umanak Island	18-19 Sep
NA-136	W1NLK	Sheffield Island	25 Sep
NA-143	AB5EB	Galveston Island	03-18 Sep
NA-159	W2NTJ/VY0	Farmer Island	17-18 Sep
NA-173	W2NTJ/VY0	Long Island	06-25 Sep
NA-196	W2NTJ/VY0	Belcher Islands	08-11 Sep
NA-198	VO1BAR/P	Cabot Island	16-22 Sep
OC-022	YC9DBP	Bali Island	01 Sep
OC-022	YC9BU	Bali Island	02-14 Sep

OC-027	FO0SAL	Marquesas Islands	11-20 Sep
OC-027	FO5QG	Nuka Hiva Island	05-07 Sep
OC-032	FK/F6BUM	Les Pins	03-04 Sep
OC-033	FK/F6BUM	Loyalty Islands	01 Sep
OC-035	YJ0AIR	Iririki Island	17-18 Sep
OC-059	V63AO	Kosrae Island	01-21 Sep
OC-064	A35MU	Vava'u Island	09-13 Sep
OC-064	A35TU	Vava'u Island	01 Sep
OC-067	FO5NL	Raiatea Island	10-21 Sep
OC-067	FO5QS	Huahine Island	03-22 Sep
OC-067	FO0SAL	Raiatea Island	04-05 Sep
OC-075	YC5YAS	Batam Island	02-16 Sep
OC-114	FO0DEH	Raivavae Island	21-25 Sep
OC-119	DU8ARK	Jolo Islands	09-10 Sep
OC-129	K9AW/DU6	Negros Island	18 Sep
OC-135	P29BI	Bougainville Island	02-25 Sep
OC-137	VK4CY	Lamb Island	08-16 Sep
OC-137	VK4GP	Bribie Island	01 Sep
OC-141	VK8KTC	Groote Eylandt	25 Sep
OC-147	YC9YKI	Yapen Island	13-18 Sep
OC-148	YC9MKF	Timor Island	01-25 Sep
OC-154	VK8AN/6	Troughton Island	08-20 Sep
OC-201	ZL1DD	North Island Coastal	21 Sep
OC-210	YC8RRK	Sangihe Island	01-13 Sep
OC-210	YC8TXW	Sangihe Island	01-22 Sep
OC-212	VK2NP	NSW Centre group	23 Sep
OC-230	VK9RS	Rowley Shoals	21-25 Sep
SA-046	ZV7G	Santo Aleixo Island	03-12 Sep
SA-046	ZW7G	Itamaraca Island	24-25 Sep
SA-068	8R1AK/P	Wakanaam Island	01-20 Sep

Incidentally, I usually do not list obvious islands in this list, such as the Hawaiian Islands (OC-019). If you are new to chasing IOTA, and also new to the art of chasing DX, here is the chance to do both at the same time. Therefore, anyone that already has DXCC is well on their way to qualify for IOTA. And, don't forget Long Island, where a large portion of New York DXers reside.

Antique QSL Department

This month we are going to step back into the 1930s to observe QSL activity out of Europe. All of these cards come from the collection of Bob Ekleberry, W4CKD, formally W8PQK in those days.

Bob's first card shown here is for a contact he made with D4AFF in Germany. According to the card this confirmed activity in the 10th International DX Contest during the month of 1938. The particular contact was on 08 March on 10 Meters. Bob had sent 598222 and received 456777. I haven't a clue as to what the exchange

New Orleans DX convention QRT

The New Orleans International DX Convention has called it quits after eight years. A message from Convention President Don Boudreau, W5FKX, said that after "several weeks of review and soul-searching," the convention's Board of Directors voted to dissolve the annual convention. Faced with a financial deficit and a flat attendance for the last several years, a majority of the Board reportedly no longer was willing or able to justify the exten-

sive amount of work and effort that was required to maintain a quality program. "It was with great sadness that this final step was taken," said a statement from Boudreau. The Board extended its sincere thanks to the Convention's

friends and supporters, as well as to all those who have attended over the last eight years. The last Convention was held the weekend of 28-29 August.

— ARRL Letter

DX Prediction — December 1999

Maximum usable frequency from West Coast, Central U.S. and East Coast (courtesy of Engineering Systems Inc., Box 939, Vienna, VA 22183). The numbers listed in each section are the average maximum usable frequencies (MUF) in MHz for contacting five major areas of the world centered on Africa—Kenya/Nairobi, Asia—Japan/Tokyo, Oceania—Australia/Melbourne, Europe—Germany/Frankfurt, and South America—Brazil/Rio de Janeiro. Smoothed sunspot number = 147. Chance of contact as determined by path loss is indicated as bold *MUF for good, plain MUF for fair, and in (parentheses) for poor. UTC in hours.

CENTRAL U.S.A.

UTC	AFRI	ASIA	OCEA	EURO	AM
8	(14)	12	*19	*12	*18
10	(14)	12	*18	(11)	*17
12	23	11	*17	18	*32
14	29	*12	*23	*21	*38
16	31	(12)	25	19	*41
18	*32	(11)	23	15	*43
20	*30	(11)	31	13	*42
22	*24	22	*36	*12	*36
24	*17	19	*38	*12	*24
2	*16	14	27	*12	*21
4	*15	13	22	*11	*20
6	(14)	(12)	20	*11	*19

WEST COAST

UTC	AFRI	ASIA	OCEA	EURO	AM
10	(14)	*12	*18	(11)	*18
12	(14)	*12	*18	(11)	17
14	(21)	*11	*17	(17)	*34
16	28	*15	*25	(15)	*41
18	*30	14	22	(12)	*43
20	*29	*25	30	(12)	*44
22	25	*26	*35	(12)	*42
24	*22	*25	*39	11	*35
2	*17	20	*36	11	*23
4	*16	15	24	11	*21
6	(15)	*13	21	11	*19
8	(14)	*12	*19	*12	*18

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	AM
7	17	*12	(18)	*11	*18
9	17	11	*18	*11	*18
11	*31	11	*17	18	*32
13	*38	*12	*32	*23	*38
15	*41	(12)	27	*22	*41
17	*41	(12)	(22)	19	*44
19	*34	(11)	28	14	*43
21	*28	(18)	34	*13	*37
23	*22	(18)	34	*12	*26
1	*20	14	23	*12	*23
3	*19	13	21	*11	*21
5	*18	(12)	19	*11	*19

reflect Joe's comments. It sure would be easier if all DXers would keep envelopes on file as it makes the sorter's job that much easier. If you work DX then you will have incoming cards, whether you sent direct QSL cards or not, and especially if you were active in DX contests. I might also suggest you do the same with Buckmaster when entering your e-mail address.

Thanks go to the following contributors for this month's column: BA1DU, BD7NQ, CT1EEB, EA5BY, K3ZO, W4CKD, AA4NN, NE8Z, Western Washington DX Club (WAØRJY), Northern Arizona DX Association (W7YS), American Radio Relay League (NC1L), WebCluster (OH2AQ), 425 DX News (I1JQJ), The OPDX Bulletin (KB8NW), DX-News (NJDXA), The Low Band Monitor (KØCS), The Daily DX (W3UR), and QRZ DX (N4AA).

I have prepared this month's column

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a week shorter than usual as our plans include attending the RSGB HF and IOTA convention in October. Coverage of this convention will be a feature in a future issue of Amateur Radio's best all around publication. 73 de John N6JM — John F.W. Minke III, N6JM can be reached at: P.O. Box 310, Carmichael, CA 95609-0310 or via e-mail: n6jm@pacbell.net.

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 D4CP 1927-929 D4JPC 1930-1932 D4CAF 1933-1935 D4GWF 1935-1936
10. INTERNATIONAL DX-CONTEST MARCH 1938.
 Radio: *W8PRX* Your Nr. *598222* My Nr. *458* 777 on *28* MHz.
 March 6, 1937 MEZ.
 I worked 36E W-VE-Stations, 33 Districts on 7.14 28 MHz.
 Thank you for the Contest-QSO, and I hope to see you again,
 surely during the German-DJDC-Contest, April 1938.

61 Kępczyńskiego **EUROPE** Łódź, Poland
SP1LP
 FIRST SP TO WORK ADEN AND ALASKA. FOTO FR FOTO!

ROUMANIAN S.W. RADIO STATION
 QTH: *Ilfov*
 RADIO *W1PQX* CONFIRMING QSO
 11 MC OF *150* WATTS AT *2225* GMT UR SIGS RST *599*
 TX *60* WATTS RX *2-245* COND. *100*
YR5VX
 REMARKS *best of luck. nice*

means, other than the first part is signal report.

The operator was R. Hammer, who was D4CP between 1927 and 1929. If he is still with us he would be an old-timer. Notice the rest of the information on the card.

The second card is printed in red. SP1LP was the call used by R. Iztkowski back in 1938. Note that this individual claims to have been the first Polish amateur to work Aden and Alaska, which was no easy thing to do in those days.

YR5VX was the call assigned to an operator named Nick of Roumania. This card too confirmed a contact Bob made in 1938. This fellow was running 15 watts.

QSL Information

Joe Blackwell, AA4NN, has some words of advice: "If you work DX, surely you have SASEs on file with your incoming QSL bureau, no? As the sorter for letters A, B and X at the W4 incoming bureau I see lots of cards hit the dead letter box, no SASE on file. Something else that helps letter sorters is an email address. If you have e-mail, go to www.qrz.com, lookup your call and enter your e-mail address there."

I'm sure all bureau workers will

QSL Managers

3B8/PA0VHA PA0VHA FT5ZJ F2YT TM5B FSXX 3B8/PA3EPD PA0VHA FY/DJ6SI DJ6SI TM5CMR F6IGF 3B8/PB0AIT PA0VHA GB5FI GW0ANA TP0CE F6FQK 3W6KS JA8VE H44MY JA0IXW TT8DF F5SWB 3W6MG JF1MGI HC8N AA5BT TU5JF TU2CI 3XY1BO F5XX HG5C HASLV TY1RY W6G0AZT 3Z0ZSM W6G2JP HIS00UD H13FE UA9AH UA9AB 4N1N YU1AST HI9UD H13FE UA9AJ UA9AB 4S7DA W3HKN HK3OSA DF4UW UA9BA UA9AB 4S7RO DJ9ZB HK3TAS HK3SGP UA9CDC G3SWH 4S7SW ON6TZ HS0ZBS HS2CRU UA9QA RW9QA 4V30CNT HH2B (HHS) IA5/KB0IP IKB0IP UA9QGB RW9QA 4V30CNTWA4JTK (DX) IY4W I4UED UA9RH RW9QA 4X6HI KG2FH J28FF F6ITD UA9RQ RW9QA 5B4/RZ9WZ N2AU JR0YJL JE0SQP UE6AAF UA6AF 5N0ZKD OK1KN JW21J LA21J UE9AWA UA9AB 5R5FU SM0DJZ K71L/KH0 JF3PLF UP5P UN5PR 5W0GD PA3AXU KH0/JJ2NYT JJ2NYT UT1T UR7TZ 5W1CW ZL1AMO KH0/JK1ATT JK1ATT UT9NA UR4NWW 6K0C R1ANF KH0/JK3HLP JK3HLP UU4JZBP UU2JQ 707CE IN3VZE KH0/KF8TW JH3TXR V31KR K5KR 707HB G0IAS KH4/W4ZYV W4ZYV V31KX W5FKX 7X2RO OM3CGN LU9AY NU4N V31MP W5ZPA 8P9HR K4BAI LX20AK LX1CC V31YK W5YJK 8P9NC W0SA LZUT4UM UT4UM V44KJ WB2TSL 8P9Z K4BAI N07F/KL7 K8NA V63DX JA7HMZ 9G5DX JH8PHT OD5/3A2MT 6W1QP V63TM JA7AB 9H3Q PA0RDFY OD5/FS5QM F6FYA V73CW AC4G 9H3S PA3HGP	OD5RAL VE3FU/NP2 VH3JUV QH0B VK2NP/P QH2B 9H3ZO VK2EO OH0KCB OH3RM VK2PB/P VK2EO 9H3ZP PA3GR OH0LQK OH3LQ VK2RDP/V VK2EO 9H4GRS 9H5JO OH0V OH4JLV VK2XN/P VK2EO 9M2XA JF4WPP OH0XY OH6XY VK2ZL/P VK2EO 9M6BG VR2BG OL5O OK1FY VK4DEK DL1MHM 9U5D SM0BFP OT8L ON7YP VK6EEN/P CT1EEN 9Y4SF Y4AAJTK OT8T ON4UN VK6ISL VK6LC A35SO DJ4SO OX/OZ8AE OZ8AE VK8PY/6 K9PPY A35ZL DJ7RJ P29BJ VK4EJ VK9RS I1HYW A61AO N1DG P3A W3HKN VO2AC VE3FU BA1DU/7 W3HC PJ2/PA0VDV PA0VDV VO2CQ VE3FU BA1HAM/7 NE9Z PP4P PP1CZ VO2WL WB8YTZ BA4RC/7 BY4RSA PS2V PY2AA VP2E N5AU BD7NQ/7 W2AY PW1Z PP1CZ VP2EREM WB2REM BD7NQ/7 W2AY PY0A PT2GT JF3PLF K6RPF B17W BA7JA PY0B PP1CZ VQ9DX AA5D BV4OQ W3HC R1AND c/o NT2X V09JQ W9JHX BV5DR W3HC R1ANF RK1PWA VQ9QM W4QM BX0QSL JA1JKG R1ANZ RU1ZC VQ9WM K7IOO C56HP JA1OEM R6Y RZ6AXO VR2DXA VR2XRW CE0AA CE3WGH RA3GS IK3POD VU3WLN W7LN VE0YA JAG6DB RA6Y RZ6AXO VY0/KR6MR KR6MR CE0ZAM CE3ESS RK9AWC UA9AB WP3C W3HKN CM6YI W3HKN RK9AY UA9AB XT2HP JA1OEM CO8DC VE3NXB RM6Ap UA6AF XU7AAV G4ZVJ C09/DIG1 DL8JS RM9RA RW9QA XX9TRR N6XJ CR8A CT1EEB RM9RM RW9QA	OD5RI VE3FU RM9RO PA7DX OH2BH OH2BH VK2EO VK2EO PD1AIY OH3RM VK2EO VK2EO PA3GR PA3GR OH3LQ OH3LQ VK2EO VK2EO 9H5JO 9H5JO OH4JLV OH4JLV VK2EO VK2EO JF4WPP JF4WPP OH6XY OH6XY VK2EO VK2EO VR2BG VR2BG OK1FY OK1FY DL1MHM DL1MHM SM0BFP SM0BFP ON7YP ON7YP CT1EEN CT1EEN Y4AAJTK Y4AAJTK ON4UN ON4UN VK6LC VK6LC DJ4SO DJ4SO OZ8AE OZ8AE K9PPY K9PPY DJ7RJ DJ7RJ VK4EJ VK4EJ I1HYW I1HYW N1DG N1DG W3HKN W3HKN VE3FU VE3FU PA0VDV PA0VDV VE3FU VE3FU NE9Z NE9Z PP1CZ PP1CZ WB8YTZ WB8YTZ BY4RSA BY4RSA PY2AA PY2AA N5AU N5AU W2AY W2AY PP1CZ PP1CZ WB2REM WB2REM W2AY W2AY PT2GT PT2GT K6RPF K6RPF BA7JA BA7JA PP1CZ PP1CZ AA5D AA5D W3HC W3HC c/o NT2X c/o NT2X W9JHX W9JHX W3HC W3HC RK1PWA RK1PWA W4QM W4QM JA1JKG JA1JKG RU1ZC RU1ZC K7IOO K7IOO JA1OEM JA1OEM RZ6AXO RZ6AXO KR6MR KR6MR CE3ESS CE3ESS UA9AB UA9AB W3HKN W3HKN W3HKN W3HKN UA9AB UA9AB JA1OEM JA1OEM VE3NXB VE3NXB UA6AF UA6AF G4ZVJ G4ZVJ DL8JS DL8JS RW9QA RW9QA N6XJ N6XJ CT1EEB CT1EEB RW9QA RW9QA	YB0AZ CR8ABE WTTSO RT1ABE RM9RO RW9QA YB7ZKS YF7PT CR8END CT1END RM9RX RW9QA YN6HM N5GTZ CR8ERK CT1ERK RM9RX/9 RW9QA Z2/D3XZ DF3XZ CR8FMX CT1FMX RM9RZ RW9QA Z2/W0YG W0YG CT3FN HB9CRV RP6Y B26AXO Z28JW G3UUV DL1GKG/H13 K2DPG RP6YCP RZ6AXO ZB2/W5FI W5FI DU1ODX NH0E RP9ATZ UA9AB ZC4ATC 5B4YX DU67RWW DL4OCM RP9MOF UA9ANN ZD8V KF4OXX E4/OK5DX OK1NTN RV7AA NT2X ZD9HGW GM6HGW E44A K6NAN RW9QA RW9QA ZF2NT G3SWH E48/DK2OC DL7VRO RW9QA W3HKN ZF2SO K2ZD ED9DLM EA9BO RW9RN RW9QA ZK1MGS J8DEN EG0UV EA5GMI RY6Y RZ6AXO ZK3CW SM0AGD EJ/ON5KL ON5KL RZ9A UA9AB ZK3DX SM0AGD EK7DX F5LQG RZ9AZA UA9AB ZK3YL SM6WYN EL2DT IK0PHY S19AM SM3CVM ZM10SJ ZL1CDX EL2WW ON5NT SV5/H4XG/P HA4XG ZM75AA ZL4AA EM50UWC UT5UN T31K SM6CAS ZP0Z W3HKN ER0F UX0FF T31T SM6CAS ZP40Z W3HKN ER8C ER1DA T31YL SM6WYN ZP5Z W3HKN ET3VSC DA0RC T48RCT SK0UX ZP6T ZP5MAL E28ZY I2JSB T88UY JR6OCL ZW2A PT2BW F6FCM/TY F6FNU T97M K2FP ZW2Z PY2ZI FO0SCH LX1SP ZZ1AA PP1CZ FO0SUC F5JWJ TL8CK F6EWM ZZ7Z PR7AR	Box 22, Victoria, Gozo, Malta 9M2TJT. 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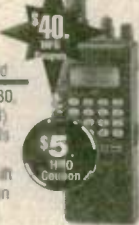
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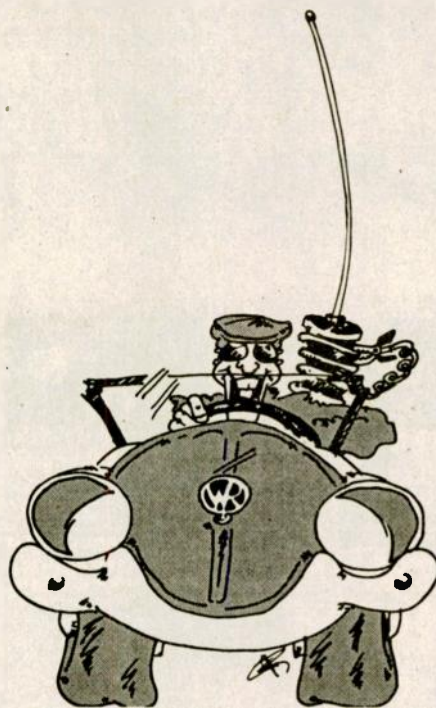


Mobile HF antennas... and noise

When I started this column in the August 1998 issue, I said I like to have skeds with friends while traveling. I recently did this again on a trip to do some four-wheeling in Utah and Colorado. Bill Harrington, N6MSI, his dad, Curly, and I left California in our two vehicles. At the same time, Ross Stevens, WØXJ, left Kansas headed west. We arranged to meet on 40 Meters every couple of hours while traveling. I also alerted some friends by e-mail.

I talked with Larry Murdoch, K6AAW, in Redding, California, on the first sked while crossing the Nevada state line on U.S. 6. I have known Larry since he was first licensed in 1953. Keith Crandall, K6QIF, broke in from Sacramento. Keith and I were both surprised because he didn't know about our trip. I made another contact with Larry on the next sked, but did not hear Ross that day. The next morning, Ross reported in on the 20-meter Elks Net from Salida, Colorado, about where we expected. I hooked up with Larry again on 40 Meters while crossing the western Utah desert. George Besley, WB6DQP, was also on from Woodland, California. But we still heard nothing from Ross. That afternoon I was able to contact Ross on 2 Meters from a high point on I-70, coming into Green River, Utah, where we were to meet. He suspected a problem with his 40-meter mobile antenna.

I was disappointed that our HF mobile-to-mobile attempts failed, but having friends on tap reassured me that my rig was working and helped pass the miles away. On our return trip, I had an hour long QSO with



Larry and another friend, Jerry Fuller, W6JRY, in Forest Ranch, California, while traveling between Tonopah and Hawthorne, Nevada. I don't want to make this column, "Les Takes Another Trip," but I did want to give the flavor of such operating. For a trip report with photos, see my web page listed at the end of the column.

John Strain, KØHGW/6, sent this description of installing an HF mobile antenna on a typical modern car:

"I installed an HF antenna on my Toyota Celica in the following manner. I bolted a 1/4" aluminum plate (appx 12"X14") under the rear plastic bumper. The plate extends far

enough under the car to pick up the bumper mounting bolts so it is electrically grounded to the car. The plate is mounted slightly off center of the bumper. Under the plate I mounted an SGC antenna tuner. I drilled a hole in the plate to mount the antenna spring so that it is in the center of the bumper. I attached three lengths of very large copper braid to the plate and ran one up each side underneath the car body, up around the wheel wells and forward to the front bumper. The third one runs up the center of the car underneath and is tie-wrapped so as not to get wrapped around the drive shaft. The antenna consists of a standard spring base, a Hustler fold-over bottom section, a Hustler straight section, a smaller spring and then the loading coil. This makes for a rather TALL antenna and becomes quite unwieldy so I have it guyed with some black dacron cords through the two rear windows and attached to the seat belt fasteners. I fabricated a plexiglass device attached to the trunk lid which keeps the antenna from leaning forward and hitting the trunk lid. A notch keeps the antenna from leaning sidewise. I can keep in contact on 75 Meters with a friend over 125 miles away, all the way from my driveway to his. The total antenna height is over 12 feet, but it does clear all the overpasses, some just barely. The SGC tuner allows me to QSY easily. It can tune all bands using the 10-meter loading coil, but with reduced efficiency, so I use the proper loading coil for each band. The four-foot tilt over section by itself worked, but when I added the extra four feet I noticed a considerable improvement!"

Ken Chaffee, WA1QXR, wants something temporary. He and his wife are touring the National Parks in the western U.S. next summer, flying from Rhode Island and renting a car.

"The XYL (N1XHT) told me I ought to find a way to take an antenna on the plane along with my IC-706MKIIG and AT-180 so I can work HF mobile out west as I do here in the east. What would be a good antenna and mount that would travel well and be easy to put on a rental car to work 20-15 and 10 Meters? At the moment I use a Hustler with triband adapter, an H-frame mag-mount, and fishing line guys. This, however, would be difficult to take aboard a plane and to mount on a rental car. Any thoughts?"

I told him that I'm not even going to

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try to answer how to get all his stuff on the plane. Maybe someone else could share their experiences.

I said that I have a five-inch magnetic mount and a five-foot 20-meter tapered fiberglass whip that I put on one vehicle at times. People that I work on a net can't tell the difference between the whip and a 20-meter Hustler on my other vehicle. Mounts with three magnets would be as much trouble as his H-frame mag mount to get on the plane. Ken wrote in September, so I said he had time to shop his local Ham Swaps for what he wants. I'm slowly picking up a history of mobile antennas that way. Single band antennas would be better than one bulky multi-band antenna. I don't recommend a tuner on a single band antenna to change bands.

There is some question about mag mounts providing sufficient capacity to the metal car body for a good ground plane. However, larger magnets on the higher bands are probably not a concern.

If you want to know what my little 20-meter whip is, I don't know. I won it at a local Ham Swap over 20 years ago and never tuned it or used it until a cross-country trip three years ago. It has a yellow plastic cap on the top, if that is any clue.

Monte Chambers, KO6XI, reports a problem with a "big time noise level, S-9 when the engine is running."

"I installed an Icom 706 MK II in a 1998 Mercury Marque. The antenna is a High Sierra (screwdriver). The radio is in the trunk with the head in the passenger compartment. The power cables going to the radio from the engine compartment are #4 awg welding cable. I installed a second battery in the trunk with a battery isolator switch from the alternator. I have 70,000 mfd across the leads at the radio. Everything is grounded with 1/2 inch braid straps. I have located the noise source as the air bag sensors and engine computer. When the engine is off the radio works great. I am sure the noise is coming in through the antenna. I can put in (more) coax and move the antenna 50' feet away and no noise. I put 12 amp toroids on the fuel pump so it's not that."

He reports trying many suggestions that don't work, and contacting Ford Motor Co., with no help. He thinks he knows the source, but doesn't know what to do. Anyone else have this problem?

Here's another HF mobile web page. This one belongs to Bill Prats, K6ACJ,

and is at <http://www.biztek.com/k6acj/>. His page is to promote HF mobile operation and shows detailed photos of his HF installation in a VW Westphalia camper van. Take a look. We've linked each other's HF mobile web pages.

Let me hear from you on any HF mobile subject! Send e-mail to lcobb@compuserve.com, or write:

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FRS and GMRS for SAR?

Before I jump into this month's topics, let me revisit last month's column concerning grounding. A reader wrote to clarify my comments concerning water pipe grounding. He said "it is not an option to ground the water pipe, it is mandatory by the National Electrical Code. . . ." He goes on to explain that should, for example, your water pipes become energized by a bad water heater, anyone taking a bath or shower could be electrocuted. He's absolutely correct — but let me remind you of my caution that you seek the input of a qualified electrician to help you meet code requirements. In one house I rented some years ago, the water lines were NOT grounded to the electrical service ground and it required an electrician to correct that and a number of other problems. My first house had only a two-wire electrical system and I don't think anything was properly grounded — alas, the challenges of an older home. The reader pointed out that all grounding, including water pipes, be connected as per code to the service ground. And that's where your radio system ground should also be connected — to the electrical service ground. As I cautioned before, don't do this without guidance and assistance from a qualified electrician. Voltages are lethal in and around your electrical service. Improper grounds can kill you. Be careful. My comments concerning water lines were perhaps unclear. Never assume your lines are properly grounded if you're installing additional ground rods. Connect your ground system properly — to the electrical service ground. Based on my personal experience, I never trust safety installations that I didn't personally inspect and/or have an inspector I trust check things out. Too many corners are cut and there are too few inspectors able to take the time to completely check a builder's work. It's sad to say there are always one or two contractors willing to cut corners knowing the chance that an inspector will discover the error is minimal. And with my luck, it will be my house that had the corners cut. Please be careful. Paying an electrician for a couple hours consulting time is a good investment!

Family Radio Service

Last April a reader wrote seeking input for a radio system

he was setting up for his search dog group. While he was an Amateur Radio operator, the rest of the team wasn't and

they were planning on using these tiny Family Radio Service (FRS) walkie-talkies. We shared a few memos back and forth exploring how his team and FRS could work. FRS is basically a low-power, unlicensed service in the UHF band covered by FCC rules in Part 95, subpart B. In 95.193 we read that an FRS unit can be used to reach other FRS units but cannot connect one of these radios to the telephone system via an autpatch. Part 95.194 tells us that we may not make any modifications to our FRS radios and we cannot connect antennas, power amplifiers, or anything else that has not been approved by the FCC for that service. So, in a nutshell, you can use your FRS radio for personal and business use as long as you use unmodified FRS units and, of course, that you follow all appropriate guidelines. There are, however, technical limits. An FRS unit is a low-power device, typically well under half a watt. Second, the antenna you use is the one on the radio which cannot be replaced or the unit connected to a mobile or base antenna. They do, however, make great units for public service work within a local area. They are UHF and thus line-of-sight, but totally useable, for example, within a staging area, a base camp, a flight line, or among search team members during a line search. The FRS uses 14 frequencies in the UHF band such as 462.5625, 462.7125, and 467.6625 MHz. Seven of these 14 frequencies are common to FRS and the General Mobile Radio Service (GMRS). Seven frequencies are solely for FRS and GMRS has 16 other frequencies (eight channel pairs) used only for GMRS. I posed the question to several advisory groups as to whether a GMRS station could communicate with an FRS station. The answers were all "yes."

A Typical Scenario

So here's the scenario I would consider. Several of you who support SAR operations might apply for and obtain a GMRS station license. This service allows higher power, external antennas, repeaters, etc. in the UHF band. GMRS allows all of your overhead team to use a local repeater and simplex channels and gives you a way to integrate with other non-Amateur Radio groups (members of these groups obtain a GMRS license and join your GMRS repeater group). Because GMRS and FRS share several simplex frequencies, you could set up a GMRS base station (limited to five watts ERP on these common frequencies) in the field with a good antenna and use this station to work with your FRS-equipped team members. You're still going to be limited by the FRS operational range, but you'll have extended it by using GMRS. You then use GMRS to relay back to the incident command post and you've got a pretty reliable UHF system. FRS units are selling for as low as \$30 and they do make great radios for families and groups for close proximity events. My neighbor has several that the kids

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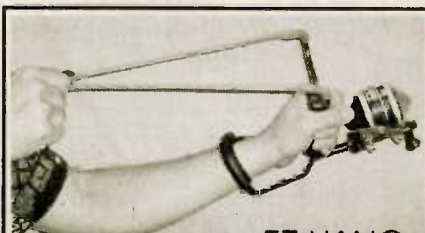
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use in the neighborhood to keep in contact and to know when it's time to come home for dinner. I've experimented using my GMRS station and discover that with the outside GMRS antenna (and five watts ERP), communication with FRS units is very useable for some distance.

The Best Service?

Certainly there will be arguments against using FRS in any public safety environment, but I've heard the same arguments against using Amateur Radio. It's easy for an individual to convince an agency that any outsider assistance is wrong because "what we're doing is secret" or what ever the current argument is. You have read my comments and I'll restate them: Use what will work best to serve those in need! I have participated in search missions where the 11-meter Citizens Band worked best. I've been in locations where HF worked best. A well-equipped communications team will be ready to use properly-licensed equipment in concert with the agencies they serve and will be able to support the mission at hand. It's wrong (and you may quote me) to assume an esoteric stance that says "my way is the only way." Teamwork creates life-saving scenarios. Teamwork effects rescues of the living. I firmly believe that an exclusionary attitude is hazardous to the people you're trying to rescue! I would urge you to seek ways to augment, compliment, and improve communications for the agencies you serve in time of disaster. Before the emergency strikes, use the "calm" to develop reliable systems that you can stress-test during exercises and non-emergency events. When the disaster strikes, it is not the time to build the "kludge system."

A Final Note

I did receive a note from the FCC concerning FRS and GMRS intercommunication. The FCC spokesman referred

me to the "Memorandum Opinion and Order released 09 November 1998." There he said you can read paragraphs 24 and 25 where the commission said that "GMRS stations and FRS units may communicate with each other if the individual operators so choose." The FCC spokesman also said that "allowing the exchange of messages, particularly in emergency situations, furthers our goal of promoting public safety." If you're interested in FRS, GMRS or the FCC's memorandum, simply choose your favorite Internet search service and plug in any of the above service names. You can visit the FCC at www.fcc.gov and I guarantee there are dozens of sites that have material about FRS and GMRS.

I was listening to a search operation last week for a missing aircraft over the Great Salt Lake. It was great to hear agencies cooperating and communicating with one another. There were Civil Air Patrol and other volunteer aircraft covering the lake from above and Box Elder County sheriff teams covering the lake shore from roads and on the water with boats. Aircraft from different agencies coordinated on the air search frequency (123.1 MHz) and I was impressed at the amount of cooperation that existed! When leads were developed, information was quickly shared. The missing pilot was well-known in the Ogden, Utah area so it was unfortunate that he did not survive the crash. I salute the quick response of all involved and the very effective

communication used on this mission. The quick and effective response signalled that everyone was focused on the purpose of SAR, "That others may live." Until next month, be safe and considerate of others. I hope Santa brings you that new rig you wanted and I'll listen for you on HF and 10 Meters! Best wishes from Salt Lake City!

— Jerry Wellman, W7SAR, can be reached at: P.O. Box 11445, Salt Lake City, UT 84147 or via e-mail: jw@desnews.com

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BASIC Capacitors

Our last column dealt with compact loop antennas. These, we said, were essentially limited-space antennas comprised of a loop somewhat less than a quarter wavelength in diameter that was tuned by a capacitor. The BASIC listing accompanying the article provided design data to permit construction of compact loops for virtually any HF frequency.

Since writing the article I have discovered several other articles dealing with compact loops, some with novel ideas for constructing the tuning capacitors. The capacitor is usually the "weak link" in this type of antenna.

The capacitor should be bonded to the loop and should not rely on brushes or bearings to conduct the loop's high circulating currents. Loop antenna expert Ted Hart, W5QJR, recommends using split-stator capacitors for that reason.

The rotor plates of a split-stator capacitor are not electromechanically connected to anything; only the side plates are. The rotor plates merely provide capacitive coupling to the opposing side plates.

Similarly, a dual-gang capacitor can be used in the same way. The fixed plates of the front gang and the fixed plates of the rear gang are each connected to the ends of the loop. The rotor plates, sharing a common shaft, merely couple the two gangs of fixed plates together. Since the rotor shaft is usually electrically shorted to the capacitor's frame, the capacitor needs to be mounted on a sheet of plastic or some other insulator.

Robert Johns, W3JIP, in the December 1991 issue of *CQ* ("How to Build an Indoor Transmitting Loop Antenna") used parallel lengths of copper pipe to build his high-current, high-voltage capacitor. By adjusting the separation

```

10 CLS: PRINT "CAP_CALC.BAS, BY KD5DL, 12/99": PRINT
20 PRINT "COMPUTES CAPACITANCE OF PARALLEL PLATES,
   PARALLEL CONDUCTORS OR COAXIAL CONDUCTORS.":
   PRINT:PRINT
30 PRINT " 1) PARALLEL PLATES"
40 PRINT " 2) PARALLEL ROUND CONDUCTORS"
50 PRINT " 3) COAXIAL PIPES": PRINT
60 INPUT A: ON A GOSUB 70, 110, 150
70 PRINT: INPUT " NUMBER OF PLATES IN THE CAPACITOR ";N
80 INPUT "AREA OF ONE PLATE (SQ IN) ";S
90 INPUT "DISTANCE BETWEEN PLATES (IN) ";D: PRINT
100 PRINT: PRINT "CAPACITANCE IS",.2248*S*(N-1)/D,"pF": GOSUB
   190: GOTO 70
110 INPUT "CONDUCTOR RADIUS (IN) ";R
120 INPUT "DISTANCE BETWEEN CONDUCTOR ENTERS (IN) ";D
130 PRINT: PRINT " CAPACITANCE IS",.30683/(LOG(D/R)/LOG(10));
   "pF PER INCH"
140 PRINT: GOSUB 190: GOTO 110
150 INPUT "INSIDE DIAMETER OF OUTSIDE PIPE (IN) ";B
160 INPUT "OUTSIDE DIAMETER OF INNER PIPE (IN) ";F
170 PRINT: PRINT " CAPACITANCE IS",.613664/(LOG(B/F)/LOG(10));
   "pF PER INCH"
180 PRINT: GOSUB 190: GOTO 150
190 PRINT: INPUT "DO ANOTHER ";A$: IF A$="y" OR A$="Y" THEN
   PRINT: RETURN
200 END

```

between the two pipes he was able to tune 10 through 20 Meters on his indoor copper loop antenna. Figure 1a illustrates Johns' antenna.

Joseph Street, VE3UXE, describes his unique portable loop in the Spring 1999 issue of *QRP* ("The Bushmaster Antenna"). Street's homemade 30-meter loop is made of aluminum duct tape and is tuned by a capacitor made from the ends of the tape stuck to two strips of Plexiglas. The Plexiglas is then taped together at one end to form a hinge and the other end is drilled and tapped for a plastic "screw." Turning the screw separates or closes the plates, thus changing its capacitance. See illustration 1b.

As mentioned in our last column, Ben Smith, W4KSY, fabricated a coaxial capacitor for his loop. Essentially a

coaxial capacitor is made by sliding a small-diameter pipe into a larger-diameter pipe (usually using insulated spacers to maintain the separation). Capacitance is determined by how far into the larger pipe the smaller pipe is pushed.

Another idea is to use parallel copper sheet or printed circuit board material to build the capacitor.

Affix the plates, one to each end of the loop, and use nylon screws to adjust the spacing between them. Hillman Fastener Co. and other manufacturers make 1/4x20 and 1/4x24 nylon screws in various lengths, and you should be able to locate some at your local hardware store. See figure 1c.

Finally, an interesting loop antenna by Makoto Minowa, 7N3WVM, was built using lengths of double-sided printed circuit board to form a 35.4 inch diameter loop.

His design uses a standard 200 pF, 3kV capacitor and tunes 10 through 14 Meters. Check out his design on the Internet at: <http://www.qsl.net/~7n3wvm/mag-loop.html>.

Minowa's choice of a three kilovolt capacitor brings up another point: there can be a tremendous amount of voltage developed on a transmitting loop. Minowa uses only three watts

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on 10 and 14 Meters and, assuming typical high Q and reactance values, his loop can generate in excess of three kilovolts across the capacitor's plates!

It takes about 75,000 volts for a spark to arc across an inch of air. According to the ARRL Antenna Book article on compact loop antennas, a 1,000 watt input can create up to 47,000 volts on some loop designs. At 47,000 volts, a spark will jump .6266 inches. A split-stator capacitor, at that kind of voltage, needs to have its plates spaced no closer than .314 inches!

If we cut power back to 250 watts the voltage won't be quite so high — only 23.5 kV. At 100 watts it will drop to 14.8 kV, and at 10 watts it will be down to 4.7 kV. These voltages require capacitor plate spacings of .157, .1, and .031 inches respectively.

This month's BASIC listing might be of some help in building your own capacitors. It is broken into three subroutines, each designed for each of the capacitors discussed above: parallel plates, parallel rods, and coaxial.

As a check, input "1" for parallel plates and enter "2" plates, "35" square inch area and "0.25" inch separation. The answer you should get is 31.36 pF.

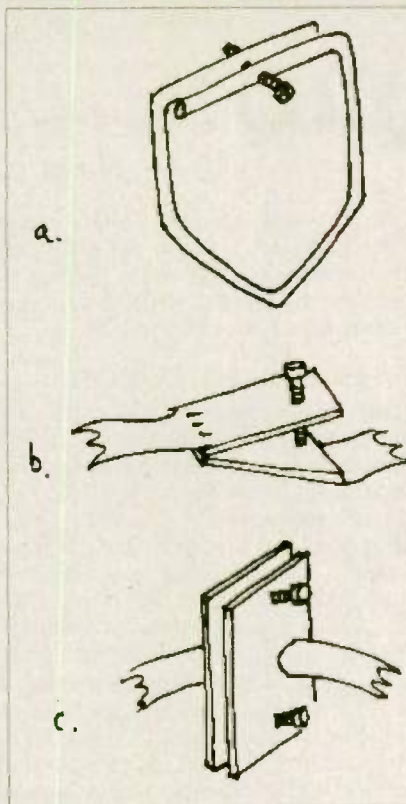
Restart and run the program again, entering "2" for parallel wires. Enter ".75" for conductor radius and "1" for distance between centers. The answer this time is close to 2.4525 pF per inch.

Run the program a third time, and enter "3" for coaxial capacitors. Enter "1.25" for the inside diameter of the larger pipe and ".75" for the outside diameter of the smaller pipe. The answer should be 2.7624 pF per inch.

Of course, you can modify the program to fit your exact needs. You could, for example, ask for inputs of conductor length in the last two subroutines, and have the program compute actual capacitance for the total length.

And you can modify all subroutines to allow for input of various dielectric constants for making capacitors with insulators other than air.

Before we leave the subject of compact loops, here are three more references you might want to read. Check Ted Hart's original article, "Small, High-Efficiency Loop Antennas," in the June 1986 *QST*; a follow-up by Jack Belrose, VE2CV, "An Update on Compact Transmitting Loops," in the November 1993 *QST*; and, in the August 1993 *QST*, an article by Floyd Koontz, WA2WVL, "A High-Directivity Receiving Antenna for 3.8 MHz."



A) the tops of the loop are separated to form a parallel conductor capacitor.

B) hinged plates form a variable capacitor that is adjusted by a non-conductive screw.

C) illustrates how two plates are fastened to the loop to form a capacitor. They, too, are adjusted by insulating screws.

The last article shows how Koontz uses three phased compact loops to make a 25- to 35-dB front-to-back ratio receiving antenna. Using good loop design and quality tuning capacitors and high wattage phasing resistors, there should be no reason that this design could not be used for transmitting signals as well.

Finally, I've updated the BASIC listing for LIL-LOOP.BAS from our last column to take into account the loop's inherent distributed capacitance and included antenna Q, current, voltage, and capacitor plate spacing for data outputs. For a printout send a self-addressed stamped envelope to my column address below.

Next time we'll see how to draw BASIC antenna radiation patterns.

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Until then, have a Merry Christmas and a happy and prosperous New Year.

— C.H. Stewart, KD5DL, can be reached at: P.O. Box 181, Duncan, OK 73534; e-mail: banner@texhoma.net.

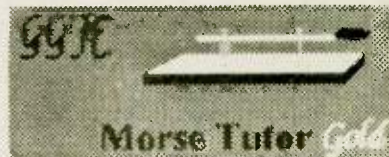


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Do You QRQ?



Nancy Kott, WZ8C

Are you the type of person who likes to "push the envelope," challenging yourself to be the best you can be, and accomplish goals that command respect and awe from your peers? No, I'm not recruiting for the Armed Services! If you fit this description, chances are you would enjoy high speed operating, also known as QRQ. As you tune along the lower edge of the amateur bands, you will hear these amateurs ripping along at a minimum of 35-40 wpm.

If rag chewing appeals to you, you may want to set your personal CW goal for QRQ. High speed operators often enjoy rag chewing as much, if not more, than the slower operators do. After all, they can exchange more information in less time than a slower operator can! To keep their skills sharp and their speed up, they have to get on the air and practice. Sort of a "Use It or Lose It" proposition.

Is QRQ within reach of the average Ham? Most high speed operators will give you a resounding "YES! If you are willing to work for it." Just like any other skill, it takes time, practice, practice and more practice. QRQ operators are justifiably proud of their abil-

ity. At first encounter, they may appear to be elitist; but just like other Morse code operators they are very willing to share tips on practicing and techniques for sharpening your code skills.

How do YOU QRQ?

First, of course, you have instant recognition on all the letters, numbers, and punctuation. Once you are comfortable at about 15 words per minute, you can start concentrating on your QRQ goal. It has been said that the best way to learn a foreign language is to live in that particular country. Apply this idea to Morse code. Immerse yourself in Morse code; incorporate it into your life, listening to it as often as possible. You don't have to concentrate on what is being sent, just get used to hearing it in the background. Instead of listening to music while driving, pop a Morse cassette in the tape player (assuming you are alone — I have heard that spouses don't take kindly to this). Instead of having the TV droning while you are puttering around the house, listen to a Morse tape or have the rig on. I will talk about more ways to increase your Morse code copying speed in future columns; first let's concentrate on laying the groundwork.

All the QRQ operators I've consulted agree on one thing: **THROW AWAY YOUR PENCIL.** You have to learn to copy the code in your head. Jot down only the essential details during a chat, or QSO, on the air. It is imperative to get to the point where you can recognize the letters as you hear them and group them into words in your

mind. This will not be easy for you to do if you are in the habit of writing down each letter.

Break this habit by listening to conversations on the air at a speed that is comfortable for you to copy. Follow these easy-speed QSOs in your head and jot down the operator's name, QTH, report and call sign. Just listen to the rest. Don't worry about increasing your speed yet. First you have to convince yourself that you don't need to write down each letter, conditioning yourself to hearing the letters as words. Don't rush this part because it is crucial. Keep at it. It may take about a month, but you can do it!

One tip I particularly like is from Jim Reid, KH7M, of Hawaii. Jim suggests having a friend read a newspaper article or a story to you out loud, spelling the words to you, letter by letter. You can also make your own tapes by spelling out the text yourself. Relax, concentrate, and form these spelled words into meaningful thoughts as they are being read to you. This is the same process your brain goes through when you copy code in your head.

Have your helper (or you, if you're making a tape) read one letter per second, leaving one second of space between words. Say a letter for every tick of the clock. This is a speed of 12 wpm (at the Paris standard, of 100 letters/word spaces per minute equaling 20 wpm CW speed). Tune in WWV to get exact beats every second. When you no longer have trouble forming the text in your mind as the words are spelled to you at this pace, have your

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friend double his rhythm. That's two letters/word spaces per second, spoken two per tick of the clock. This doubles your word reading rate to 24 wpm. A big jump for CW, but not for learning to read words spelled out to you in plain English!

When you comprehend the spelled-out text comfortably at this rate, your actual CW head copy speed should be close behind. You are on your way to QRQ operation! At QRQ, you will be receiving letters/word spaces at three per second at a 36 wpm CW rate. If you can get the rhythm going at three letters/spaces per clock tick, you will know what 36 wpm CW sounds like. Thirty-six wpm is a typical QRQ DX and contest operation speed. Using a musician's metronome would allow you to accurately set the number of beats per minute; 20 wpm being 100 beats. 36, 180 per minute. 50 wpm. 250 letters/spaces, etc. A typical mechanical metronome has a top beat rate of 208 per minute, slightly over 41 wpm.

Sending QRQ is another skill altogether. Many operators are very proficient with iambic keyers and bugs, but others opt to use a keyboard after a certain point. Larry Nicholson, N8LN, uses a keyboard because it allows him to send at speeds that can't be reached by other methods. He doesn't see this as cheating it becomes a necessity when your speeds get over 40-50 WPM. Larry tells me that although modern electronics give us the ability to use code readers, they are not very common among the amateurs running QRQ.

Most of the time you can tell within a few minutes if the amateur on the other end is a "video ranger." They never stick around very long. Apparently, reading code on a computer screen isn't much fun.

One of the more infamous high speed operating clubs is the Chicken Fat Operators, or CFO. According to their "unofficial" web site, the CFO began in November 1979, when Stan Hails Jr., W9WBL, and his wife, Doris, issued the first CFO fun certificates, following high-tech talk and bad jokes about the many uses of chicken fat. Membership is by invitation from two other CFO members, who attest that the candidate enjoys sociable QSOs and is able to copy at least 45 wpm, using "ears and brain cells. If you are interested in becoming a member of CFO, start practicing the art of almost-intelligent CW conversation, at whatever speed you are almost fluent and intelligible, near the low end of the General portion of the 40 or 80-meter band (7.033 kHz is a good place to try). Sooner or later, you will probably be discovered and invited to join the rest of the cluckers." The CFO have quite a sense of humor, and use the equivalent of a secret handshake — you may hear them make a clucking sound with their keyers. It sounds just like a chicken!

The SOB (Speed Operators Bunch) net meets every night at 0000Z on 3.533 kHz. This is a small, but growing group of amateurs who become members by demonstrating the ability to send and receive (by ear) at 70 wpm. A few of

them can do more than that!

You're not going to get to be a QRQ operator overnight, but then, you wouldn't want it to be easy, would you? Don't be intimidated! Get to work — be one of the few, the proud, the QRQ! If you start now, you will be ready to dazzle 'em on Field Day!

I hope to run into you on Straight Key Night. I can't think of a better way to ring out the millennium and start the New Year! Keep those cards and letters coming, I love to hear from you. Reach me at: nancy@tir.com or P.O. Box 47, Hadley MI 48440.



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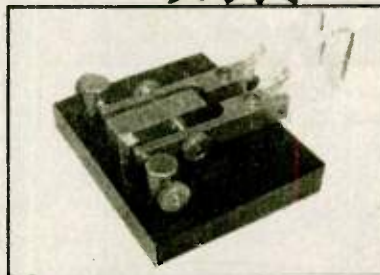
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Interservice interoperability

December 1999 continues the holiday season during which the MARS and NTS systems can serve the public through two superb free message systems. In the last MARS column (September), these services were detailed so that all operators could be prepared for the entire holiday season. It is my hope that those radiograms and MARSgrams have been flowing carrying the joys of the seasons to loved ones far and wide.

Does the public in your area know that you are ready and waiting to serve them and their loved ones? Local newspapers and other media will carry your news items. That is their function. If they are hesitant about running news items, everyone I know reads the Letters to the Editor page.

Let this ninth annual Operation Holidays 1999 be an outstanding success.

As I write this column, states along the East Coast are trying desperately to recover from the effects of Hurricanes Dennis and Floyd. North Carolina was especially hard hit by the combination of torrential rains from both of these storms. It has taken the combined efforts of both civilian and federal personnel, including military teams from all services, to even begin to

alleviate the suffering by the people in North Carolina. All of us in MARS have backed these efforts as well as hundreds of operators in the Amateur Radio community.

"All of us" means all three MARS services operating in concert with one another as well as the non-MARS assets in each immediate locality.

While this interoperability has only come into practice officially lately, that desire has been reflected in the MARS logo for 47 years! At that time, the MARS seal or logo only included Army and Air Force. Navy-Marine Corps MARS was not formed until 1962.

Chief, Army MARS, Robert L. Sutton, spoke to the delegates attending the Air Force MARS Region 2 Conference drawing the parallels between the desire for interoperability and the development of the MARS logo.

He said:

"On behalf of the Army MARS Membership, I come to you this evening with a very simple, but powerful message, **INTER-SERVICE INTEROPERABILITY.**

"You are all familiar with the MARS seal. It's our logo or emblem that we utilize so others will recognize who we are and what we do. It is also one method to proudly show the world that we are part of a very unique

and prestigious organization called 'MARS.'

"The MARS seal or logo is on our jackets, hats, and name tags. It can be found on the walls of our QTH, our QSL cards and on the MARS license that is proudly displayed on the wall for all to see.

"Have you ever wondered about the origin of the present MARS seal or logo? Some years back we did some research to find the answer, which I shared with our members and now will share with you today.

"In 1952, twenty seven years after MARS as we know it today was born as the Army Amateur Radio System, a call went out to all MARS members for submission of entries for a MARS seal. The contest was open to all members with the stipulation that the seal design be circular in shape, representing the Army Signal Corps, Air Force Communications, and Radio Communications in general. Eighty-seven entries were received from MARS members.

"All proposed seals were carefully screened at MARS headquarters. The MARS chiefs finally were able to narrow the choice down to seven and these were submitted to a MARS advisory committee. Colonel William D. Hamlin, Chairman, appointed three members of the advisory committee to make a final selection.


"After several meetings and much study a composite, incorporating features of five proposed ideas, was recommended to the committee and adopted on 07 April 1953. The MARS seal is composite designs submitted by then LTC Philip Sansone, PFC Harold White, 2nd LT Robert Beremer, SSG John Brewer, and Eugene Sydowski.

"In 1962 the Navy-Marine Corps MARS program was launched and the seal was modified to reflect the joint service MARS program.

"Although our research was not able to capture the symbolism of the MARS seal, allow me the privilege of filling this gap from my own personal perspective. When I take a close look at the MARS seal I observe the following:

— It is our emblem, our banner, and 'our' MARS flag that we all are so rightly proud to share with the world.

— Its primary colors of Red, White and Blue came from a higher and more distinctive banner — the Flag of the United States Of America.

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— The globe itself depicts the fact that MARS is expected to meet mission requirements around the globe — and MARS has proven that it can. The radio tower and radio signals depict our primary mission and means for existence: 'Emergency Communications' — via radio.

— The two gold bands circulating the globe and the seal indicate that MARS is precious, just as gold is recognized as a precious metal and that MARS morale and welfare messages are precious to those that send and receive them.

— What I consider the most important aspect of the MARS seal are the words and stars that are encased within those two gold rings. I believe they represent you, the volunteer members, the stars of all three service MARS programs.

— As noted earlier, the seal comprises ideas of five individuals: two military officers, one NCO, a private first class and a civilian. That to me represents teamwork that remains a hallmark of MARS today.

"Look closely and you will see the key factor and what many of us believe is the future of MARS — 'Inter-service Interoperability.' This single MARS seal proudly lists all three MARS programs in a continuous circle representing the inter-service interoperability that provides the total team concept. We, MARS Chiefs, have been strong advocates of inter-service interoperability. As an example, Ray Collins and I have worked closely together over the past ten years to successfully remove old outdated barriers and the 'them' - 'us' attitudes. Additionally Bo Linfors, the Navy-Marine Corps MARS Chief, has joined with us to meet the challenges of increasing inter-service interoperability of the future."

Like Chief Sutton, I, too, see the MARS logo as not only a beautiful combination of color and design but also as a fine expression of what MARS represents to us all.

When any of you see the MARS logo, be proud of the Hams who are already members standing ready and able to communicate whenever and wherever needed. Be professional and join us in being ready. Any FCC licensed Amateur Radio operator is welcome to join with full HF and VHF operating privileges. We would welcome you to a MARS that is...

Proud, Professional and Ready.

— Lorraine S. Matthew, N4ZCF, MARS Call AAA9PR, can be reached by email at: Lorimatt@aol.com.

The following story has been excerpted from *Inside Amateur Radio*, by the late Lenore Jensen, W6NAZ. The book can be purchased from Worldradio Books, P.O. Box 189490, Sacramento, CA 95818. Price is \$9.00 plus \$2.00 shipping and handling. CA residents please add 70¢ sales tax.

Well-meant

From a lighthouse on the St. Lawrence Seaway, Ethel Williamson, VE3DTW, was a popular station talking around the world. She especially enjoyed talking to Hams aboard ships and frequently relayed messages for them.

"One day I was talking to a radio operator on a U.S. merchant ship near the Azores. He told me, 'My Captain is here and anxious to get a message to his wife in Philadelphia.' I explained we had no phone at the lighthouse but if he'd wait an hour, I would drive to the mainland and make a phone call from the canal office.

"He said, 'Fine, call collect. Tell my wife I will be in New York on the 20th. If she will meet me there, I will rent a car and we can drive to Florida for a couple of weeks holiday, like a second honeymoon.'

"Being the romantic that I am, I jumped into the car and headed up the road, bubbling over with the thoughts of the pleasure my message could bring. At the office, I dialed the operator, gave her the number and said it was a collect call.

"Well, when the wife answered, she made a fuss about accepting a collect call. The operator let me explain that it was a message from her husband on

a ship near the Azores, that I was an Amateur Radio operator, etc.

"The woman pretended not to hear me, so the operator repeated, but still she pretended to be confused.

"Then I carefully explained that her husband, after six months at sea, wanted her to meet him in New York for a second honeymoon. The operator even repeated for me.

"Then the wife loudly said, 'You tell my husband I have no wish to meet him in New York or any other place.' With that, she hung up.

"The operator was as stunned as I was. 'What will you tell the poor guy?' she asked me.

"All the way home to the lighthouse, I knew I would have to think of something. It was with very mixed emotions that I turned on the rig, waiting for his call. At last I heard him.

"I hope I am forgiven, but I said, 'Uh — your wife is sorry to say she has a bad cold and will be unable to meet you in New York.' But, aware that many ears were listening in, I added, 'She is sorry to disappoint you, but she sends you her love.'

"I know it was a white lie, but I am sure the long-distance telephone operator would have approved.

"What would you have done?"

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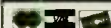
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Club Y2K preparations

How appropriate that the Lodi Amateur Radio Club newsletter *Ground-Wave* carries an ad for the Waffle House, conveniently located at 224 Ham Lane in Lodi, CA. At least a few members of the Lodi club have made unique plans for the upcoming Y2K/New Year's Eve celebration.

Larry Sopp, KN6KO, the San Joaquin County (CA) RACES Radio Officer, asked the club for standby volunteers to cover the period from 16:00 PST (0000Z) on Friday, December 31 until sometime in the morning of Saturday, January 1. The county Office of Emergency Services wants to be prepared in case of a Y2K emergency. Members would be sent to support communications needs for local hospital, fire, or police emergencies.

The Lake Monroe Amateur Radio Society also plans to be on Y2K standby duty. The Seminole County (FL) Sheriff's Department Communications Supervisor asked for help in case anything happens there.



The masthead of the Plano Amateur Radio Klub *Parking Ticket* newsletter prominently features the slogan "Having fun with Amateur Radio!" Those few words certainly highlight what we all enjoy about Amateur Radio.

PARK president Bill Drake, KJ5ZV, reported that the group's recent board meeting included representatives of several clubs from throughout the Dallas/Fort Worth area. Showing up were members from employee Amateur Radio clubs located at MCI, Alcatel, UTD, Richardson, E-Systems, and

Texas Instruments.

An outcome of the meeting was the suggestion that more such meetings be scheduled in the future. Bill commented, "You can't believe all the service projects that are going on that some of the other clubs are supporting." He also said that, taken together, these projects provide "many opportunities for Amateur Radio to make a concerted impact on the Dallas/Fort Worth area." He hopes future joint meetings could help clubs coordinate their efforts.

Again, this issue I take note of some excellent thoughts from *Squelch Tale* editor Tim Garrity, WD9DZV. From the bully pulpit of the Chicago FM Club newsletter Tim points out how much "they" does for the club. His "Note From the Editor" column follows:

"Repeater broken? They'll fix it.
BBS or Web Page down? They'll fix it.

Upcoming hamfest? They'll plan and work it.

New amateur on the air? They'll help him.

Need someone for the public service communications? They'll always be there."

"Who is "they"? We're all "they"! It's pretty obvious that we've got to pitch in. This is our hobby. This is our club. If you or I don't stand up and pitch in, we're not doing our job and were hurting no one but ourselves. You're

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part of the group, you're an Amateur Radio operator, you're a Chicago FM Club member. Enjoy your hobby and Club, get involved!"

Looking for a money raising idea for your club? Take a cue from Greg Estep, KE6VTA, of the Mount Diablo Amateur Radio Club. At the meeting just prior to the 1999 Pacifcon convention weekend, the club auctioned off \$79 a night rooms at the host Sheraton Hotel.

In his "Talking Out Loud" column, Bruce Wayne Moyer, KI8GR, tells readers of *The Spark Gap* that the Motor City Radio Club expects to turn out over 20 new Hams during the year 1999. Bruce says that "the best service you can do for the hobby to keep it vital is to help new people get involved." He thanked all members involved in offering the CW and theory classes.

Bruce further reported that he "had an absolute ball in this past year being your President." He added that "anything worthwhile I've been able to do has been completely due to the enthusiasm of our members and the willingness of the members to carry the ball."

It's a good leader who credits others with the successes and passes around thanks for a well done job.

Seems that the Detroit area is home to some very enthusiastic Hams. Finding their meeting room unavailable one pleasant summer evening, the Motor City group showed its ability to meet any obstacle put in its way. The club president's car served as a lectern and the meeting commenced on time in the church parking lot, with over 40 members and guests in attendance. Bet Bruce didn't bang the gavel during that meeting!

An ARES/RACES of Orange County (FL) meeting was turned into a three

hour CPR training class recently, according to *Keyed Up*, the *Lake Monroe Amateur Radio Society* newsletter. Over 40 participants took part and received their CPR certifications. This is an idea other clubs should consider. Call your local Heart Association or American Red Cross office for details.

The South Shore Fox Hunters Association newsletter highlighted the group's recent special event, a hunt for a crashed airplane beacon. The hunters were called on to find the ELT (Emergency Locator Transmitter) as quickly as possible so the victims could be rescued alive. Sammie, N1MJP, and Gene Harriman, N1EH, joined with Mark Loring, KC1ML, to hide in a Plympton, MA, woods and wait to be found. The trio used camouflaged cargo net hung from trees to stay out of sight of their hunters. In fact, they watched several participants walk right past the hiding place.

A good public relations move is to invite community leaders to speak at club meetings. The Central Oregon Radio Amateurs, Limited group hosted Police Chief Andrew Jordan and Officer Ron Maddox after Jordan

became chief of the Bend, OR, department. Many club members participate in the department's Citizen Academy which makes the city and the chief strong supporters of Amateur Radio.

Tours are always fun and informative activities for Amateur Radio clubs. The Lake Erie Amateur Radio Association chugged into Cleveland recently in order to tour the Channel 8 television studios. Word was the group was welcome but told to leave their HTs and cellular phones outside!

A great idea for a club service comes from LEARA, which put on a Test & Tune night for members. Ray Bayan, N8NAP, and Bryan Torok, N8OOF, supplied service monitors, power supplies, and a variety of other pieces of equipment for the project.

More than a dozen Hams brought handhlds, mobiles, and antennas for testing and adjustment. The team manned the test table both before and after the dinner in order to accommodate everyone. Nothing beats having a frequency & deviation test done to prove your handhld is right on the money. — Mike Flaherty, WA6UBW, can be reached at: P.O. Box 189490, Sacramento, CA 95818-9490

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A junkbox bugcatcher

Cecil A. Moore, W6RCA

This is a really simple idea. I wanted a hamstick that will handle 500 watts, so I took an old 10-meter hamstick and removed all the wire. I sifted through my junk box and found some coil stock that is 6 turns per inch with a 1.5 inch diameter, made out of #14 wire. This



Figure 1 — The cab of my pickup.

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There's a lot of space here to tell about your fine product.

is probably the most popular coil ever made and is available from Surplus Sales of Nebraska. A lot of electronic surplus places have these (or similar) coils available.

I replaced the original hamstick coil with 25 turns of this stock and tie-wrapped it in place on the fiberglass rod. (Be sure to use the black, UV resistant tie-wraps.) I soldered a piece of #14 solid wire to each end of the coil and extended each wire to the 3/8 X 24 hardware at the two ends of the fiberglass rod part of the hamstick and attached a 3/8" crimp lug to the ends of the wires. This avoids having to solder the wires to the hamstick — but it's a good idea to solder the wires to the crimp lugs. The fiberglass rod portion of the hamstick is used for mechanical support only. The RF current is carried by the lugs, wire, coil, and stinger. Some hamsticks do not have 3/8" hardware at both ends, but the upper connections should not be hard to figure out.

Now I had a 20-meter hamstick with the stinger adjusted for 14.2 MHz. It didn't take a genius to figure out that

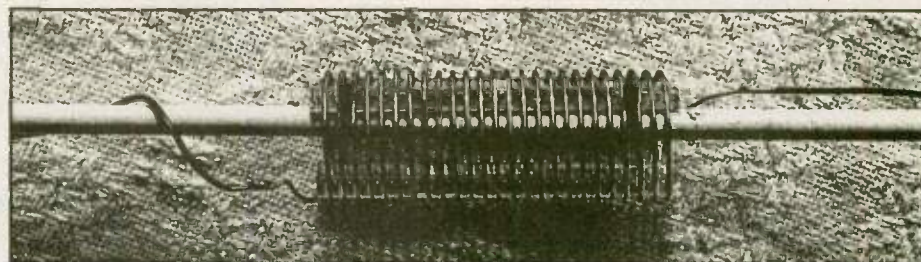


Figure 2 — Close-up of the coil wrapped to a fiberglass pole.

this same 20-meter super hamstick could be used on any higher HF band by shorting out the proper number of turns on the coil. Shorted turns sacrifice a large percentage of the signal

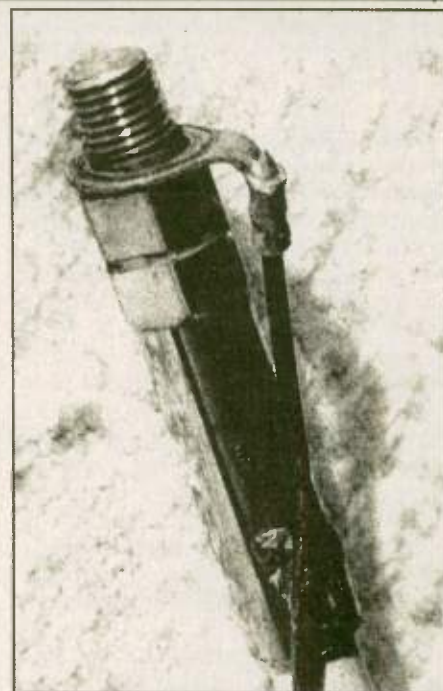


Figure 3 — Close-up view of the lug on the bottom end of the antenna. This is a really simple (and inexpensive) way to get good 500-watt, 5-band bugcatcher performance from a single old hamstick.

on the lower bands, e.g. a 75-meter bugcatcher shorted out for 40-meter operation, but the problem is much less severe on the higher bands where good efficiency is not difficult to obtain — even with a relatively low-Q coil. The shorting is done with a wire containing miniature alligator clips on each end.

Here are the resonant bands versus the number of turns shorted out from the bottom of the coil. The configuration is a 3-magnet mount on the cab of a GMC pickup and measured with an MFJ-259 analyzer.

- 20m - 0T
- 17m - 10T
- 15m - 16T
- 12m - 19T
- 11m - 22 T
- 10m - 23T

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South Central Radio Club. 8023 E. 11th Ct., Anchorage, AK 99504. Meets 2nd Fri./monthly, 7 p.m., UAA Business Ed. Bldg., Rm. 220. KL7CC, (907) 338-0662. Info: club rptr 146.97(-) PL 103.5Hz 10/00

ARIZONA

Arizona Repeater Association. P.O. Box 35758, Phoenix, AZ 85069-5758. Operates 20 VHF & UHF rpters. in AZ. Meets 4th Thurs./monthly, 7:30 p.m., APS Shure Building, 2124 W. Cheryl, Phoenix, AZ. Info: www.goodnet.com/indirect/www/ara 12/99

Cochise Amateur Radio Assn., (CARA). Meets 1st Mon./monthly, 7:30 p.m. at club facility on Moson Rd., Sierra Vista, AZ. KR7DRG/R 146.76(-) rptr. PL162.2 5/00

Old Pueblo Radio Club, (OPRC). P.O. Box 42601, Tucson, AZ 85733. Meets 2nd Wed./monthly, 7:15 p.m., Tucson Med. Cntr., Grant & Beverly St. in the AZ Rm. of the Volunteer's Bldg. (1st bldg. on the left going north off Grant). 2/00

CALIFORNIA

Amador County Amateur Radio Club. P.O. Box 1094, Pine Grove, CA 95665. Meets 1st Thurs./monthly, 7:30 p.m., Jackson Sr. Cntr., 229 New York Ranch Rd., Jackson, CA. Info: 146.835(-) 5/00

Beach Cities Wireless Society. P.O. Box 4016, San Clemente, CA 92674. Meets 2nd Thurs./monthly, 7:30 p.m., Ole Hansen Beach Club, 105 W. Avenida Pico, San Clemente. Rptr. 146.025(+)- PL 110.9 9/00

Coachella Valley ARC. Box 11092, Palm Desert, CA 92255-1092. Meets 2nd Wed./monthly, 6:30 p.m., Portola Com. Cntr., 45480 Portola, Palm Desert. Info: Bill Dews, (760) 346-8611. Net Thurs. 7 p.m. 146.025(+)- PL 107.2 5/00

Contra Costa Communications Club, Inc., W6EZZC/R. P.O. Box 20661, El Sobrante, CA 94820-0661. Meets 2nd Sun./monthly (except May & Dec.), 07:30, Baker's Square Rest., Richmond, CA. Info: S. Clark, KB6SEI, (510) 724-0158. 2/00

Downey Amateur Radio Club Inc., W6TOI. Meets 1st Thurs./monthly, 7:30 p.m., So. Middle Sch. cafeteria, 12500 S. Birchdale, Downey, CA. VHF net W6GNS rptr. 146.175(+)- Thurs. 7:30 p.m. http://www.downeyarc.org. Info: L. Vaughn, kd6nzw at kd6nzw@downeyarc.org 5/00

East Bay Amateur Radio Club, Inc. Meets 2nd Fri./monthly, 7:30 p.m., Albany Sr. Cntr., 846 Masonic Ave., Albany, CA. Info: S. Primbsch, (510) 741-8227. 145.11(-) MHz. 3/00

Fresno Amateur Radio Club. Meets 2nd Fri./monthly, 7:30 p.m., Emie Pyle School, 4140 N. Augusta, Fresno, CA. 146.94(-) 223.94(-). 11/00

Golden Empire Amateur Radio Society, (VEC). P.O. Box 508, Chico, CA 95927. Club call W6RHC, rptr. 146.85(-). Meets: 3rd Fri./monthly, 7:30 p.m. at 345 Cherry St. (Library Rm.), Chico. 5/01

Golden Triangle Amateur Radio Club. P.O. Box 1335, Wildomar, CA 92595. Meets 4th Mon./monthly, 7 p.m., Beverly Health Care, 24100 Monroe Ave., Murrieta, CA 92562. Rptr: KE6UES 146.805(-) PL 100. Info: N. Dean, AD6F, (909) 767-0449. E-mail: norbjudy@pe.net 8/00

Livermore Amateur Radio Klub, (LARK). Meets 3rd Sat./monthly, 9:30 a.m., City Council Chamber, 3575 Pacific Ave., Livermore, CA. Net Mon. 1900 on 147.12(+). Info: LARK Sec., P.O. Box 3190, Livermore, CA 94551-3190. (925) 373-1386. 2/00

Los Banos Amateur Radio Club. Meets 2nd Sat./monthly, 7 p.m., Scout bldg. at Pacheco Pk., 7th St. & Pacheco Blvd. Info: M. Germino, AD6AA, (209) 826-0903, e-mail: AD6AA@arrl.net. Net 147.060(+)- PL 107.2 every Thur. 7 p.m. Rptr. KB6NMP 147.06(+)- PL 107.2 & 444.00(+)- PL 241.8. Web: Home.inreach.com/AB6KF. 6/00

Motorcycling Amateur Radio Club. Meets 2nd Sat./monthly, 8 a.m., Lake View Cafe, 2099 E. Orangethorpe, Placenta, CA, 91 Fwy/Lakeview. Info: R. Davis, KD6FHN, (949) 551-1036 or (949) 551-2010. 5/00

Mount Diablo Amateur Radio Club. P.O. Box 23222, Pleasant Hill, CA 94523. Meets 3rd Fri./monthly, 7:30 p.m., Our Savior's Lutheran Ch., 1035 Carol Ln, Lafayette, CA. Net Thurs. 7:30 p.m. on 147.06(+)- PL 100Hz. Info: (510) 932-6125. 8/00

Nevada County ARC. Meets 2nd Mon./monthly, 7 p.m., Salvation Army Bldg., 10725 Alta St., Grass Valley, CA. Net Tues. 7 p.m. 147.015. Info: L. Johnson, KE6HWE, lindasue@mail.telis.org. (530) 273-2008. 9/00

North Hills Radio Club. Meets 3rd Tue./monthly, 7:30 p.m., Carmichael Elks Lodge, 5631 Cypress, Carmichael, CA. Nets 8 p.m. Tue., (except 3rd Tue.) & Thurs., 145.190(-) (PL 162.2 Hz) & 224.400(-) MHz. Info: E. Mead, K6ESM, (916) 331-1115. E-mail: nrhc@K6IS.org or http://www.k6is.org 4/00

Orange County Amateur Radio Club. Meets 3rd Fri./monthly, 7:30 p.m., Orange County Red Cross, 601 N. Golden Circle, Santa Ana, CA. Talk-in 146.550 (S). Contact Bud Barkhurst, WA6VPP, (714) 744-6361. WWW.W6ZE.ORG 2/00

Poinsettia ARC. Meets 1st Thurs./monthly, 7:30 p.m., First Christian Ch., Telegraph Rd. & Toloma Dr., Ventura, CA. Info: J. Casper, N6PIQ, (805) 649-1445. 4/00

River City A.R.C.S. Meets 1st Tues./monthly, 7 p.m., SMUD Bldg., Don Julio at Elkhorn, Sacramento, CA. License classes offered. Info: (916) 492-6115. 10/00

Sacramento Amateur Radio Club. Meets 2nd Wed./monthly, 7 p.m. Sac. Blood Ctr., 32nd St. & Stockton Blvd., Sacramento, CA. Info net, noon on rptr. W6AK/R 146.91(-). S. Cates, KC6TEV, (916) 391-7341 or L. Ballinger, WA6EQQ, (916) 393-4775. 2/00

Sacramento "Old Timers" Amateur Radio Society and Sacramento Valley Chapter #169 QCWA (Quarter Century Wireless Assn.). Meets 2nd Wed./monthly, 8 a.m., Lyon's Restaurant, El Camino Ave. & Watt Ave. Info: Paul Wolf, W6RLP (916) 489-8112. 12/99

Sierra Foothills ARC. P.O. Box 1005, Newcastle, CA 95658. Meets 2nd Fri./monthly, 7:30 p.m., Auburn Library (Beecher Rm.), 350 Nevada St. Thurs. nets 7:30 p.m. 145.430(-) PL 94.8, Sun. net 7:30 p.m. 28.415. 6/00

South Bay ARC. P.O. Box 536, Torrance, CA 90508. Meets 3rd Thurs./monthly, 7:30 p.m., Torrance Memorial Hosp., 3330 Lomita Blvd., Torrance, CA. Talk-in on WB6MYD rpt. 244.38(-). Info: (310) 328-0817. 8/00

Southern Sierra ARS. Meets 2nd Thurs./monthly, 7 p.m., Veteran's Hall, 225 East F St., Tehachapi, CA. Contact: Caroline, KD6KMN, (805) 822-5995. 147.06(+), 224.42(-), 145.090(S) Packet. 1/00

Tri-County Amateur Radio Assoc. P.O. Box 75, Claremont, CA 91711-0075. Meets: 2nd Mon./monthly, 7:30 p.m., Brackett Airport Adm. Bldg., 1615 McKinley Ave., La Verne, CA 91750 (so. side of Brackett Airport). Info: Chuck, KQ6NX at kq6nx@juno.com or (909) 949-8145. 3/00

United Radio Amateur Club, K6AA. L.A. Maritime Museum, Berth 84, Foot of 6th, San Pedro, CA 90731. Meets 3rd Fri./monthly (except Dec.), 7:00 p.m. Monitors 145.52 Simplex 10 a.m.-5 p.m. 8/00

Vaca Valley Radio Club. Meets 2nd Wed./monthly, 7:30 p.m. (Board mtg., 7 p.m.) Vaca Fire Dist. Str., Vine St., Vacaville, CA. Rptr. WD6BUS 145.47(-) PL 127.3. Gerald Grossardt, (707) 447-0869 5/00

Victor Valley Amateur Radio Club. P.O. Box 869, Victorville, CA 92392. Meets 2nd Tue./monthly, 7 p.m., Presidio Rec. Cntr., 11100 Apple Valley Rd., Apple Valley, CA. Talk-in 146.94(-), PL 91.5. Net Sun. 7 p.m. 146.94(-) 2/00

West Coast Amateur Radio Club, (WCARC). P.O. Box 2617, Costa Mesa, CA 92628. Meets 3rd Thurs./monthly, 7 p.m., Fountain Valley Sch. Dist. Office, 17210 Oak St., Fountain Valley, CA. 145.440(-) PL 136.5. Info: Jane, KD6ODV, (714) 531-6707 12/99

Westside Amateur Radio Club. P.O. Box 11092, Marina del Rey, CA 90295. Meets 4th Tues./monthly, 7:30 p.m., W. Dist. R. C. Bldg., 11355 Ohio Ave., W. LA, CA (VACtr. grounds). Net Tues., 8 p.m. 146.67(-) except mtg. night. Website: http://www.qsl.net/wa6rc Voice Mail: (310) 478-7555 9/00

Willits Amateur Radio Society, (WARS). P.O. Box 73, Willits, CA 95490. Meets 4th Mon./monthly, 7 p.m., Brooktrails Fire Dept. 2 NW Willits http://www.saber.net/wars. Talk-in: 145.13(-), PL 103.5. 9/00

Yolo Amateur Radio Society. Meets 1st Tues./monthly, 7:30 p.m., Denny's Restaurant, 4120 Chiles Rd., Davis, CA. Contact Dave Nishikawa, KC6YFG, (916) 756-6375/Talk-in 144.430. 12/99

Yuba-Sutter Amateur Radio Club, (YSARC). P.O. Box 1169, Yuba City, CA 95992. Meets 2nd Thurs./monthly, 7 p.m. Location announced at Mon. net, 7 p.m. on 146.085. 3/00

COLORADO

Boulder Amateur Radio Club (BARC). Meets 3rd Tues./monthly, 7:30 p.m., NIST rm 1107, 325 So. Broadway, Boulder, CO. Talk-in: 146.70(-). Info: (303) 380-6540, e-mail: BARC52@arrl.net or www.thisistrue.com/barc.html 8/00

CONNECTICUT

Tri-City Amateur Radio Club. P.O. Box 686, Groton, CT 06340-0686. Meets 2nd Tue./monthly, 7 p.m., St. Lukes Lutheran Church of Gales Ferry on Rt. 12. Info: B. Dargel, KA1BB, (860) 739-8016. 8/00

Western CT. DX Club. Meets 1st Tues./monthly, 8 p.m., Brookfield Com. Cntr. (on Pocono Rd. across from Brookfield P.O.) Info: contact Victor at: victoras@EROLS.com 8/00

FLORIDA

Gulf Coast ARC. P.O. Box 595, New Port Richey, FL 34656. Meets 4th Mon./monthly, 7:30 p.m., Marchman Tech. Ed. Cntr., 7825 Campus Dr., Bldg. C, Rm C122, New Port Richey. WA4GDN rpters. 146.67(-) & 145.33(-), serving all of Pasco County. 11/00

Lake Monroe Amateur Radio Society. P.O. Box 151353, Altamonte Springs, FL 32715. Meets 1st Thurs./monthly, 7:30 p.m., Casselberry Sr. Cntr., Lake Triplett Dr., Casselberry, FL. Info: K. Lambert, KB4DCR, (407) 359-7767 10/00

Port St. Lucie ARA. Meets 2nd Fri./monthly, 7:30 p.m., St. Andrews Church, Prima Vista Blvd., Port St. Lucie, FL. Contact Roy Cox, KT4PA, (561) 340-4319. www.qsl.net/psl2r2 or 146.955- 11/00

South Brevard Amateur Radio Club. P.O. Box 2205, Melbourne, FL 32902. Meets 1st Tue./monthly, 7 p.m., Public Library, 540 Fee Ave., Melbourne, FL. 12/99

Vero Beach ARC, W4OT. P.O. Box 2082, Vero Beach, FL 32961. Meets 2nd Thurs./monthly, 7:30 p.m., Emerg. Mgmt., Indian River County Adm. Bldg., 1840 25th St. Net Mon., 7:30 p.m. 146.64. 3/00

GEORGIA

Cherokee Capital ARS. Meets 2nd Tue./monthly, 7 p.m., New Echota Methodist Church, 488 Red Bud Rd., Calhoun, GA. 146.805(+). Info: Felton Floyd, AF4DN, (706) 629-0369. 12/99

Dalton Amateur Radio Club, Inc., (DARC). P.O. Box 143, Dalton, GA 30722-0143. Meets 4th Mon./monthly, 7:30 p.m., Magistrate Court Bldg., corner of Waugh St. & Thornton Ave., Dalton, GA. Info: Harold Jones, N4BD, 706/673-2291. 4/00

Gwinnett Amateur Radio Society, (GARS). P.O. Box 88, Lilburn, GA 30048. Meets 3rd Thurs./monthly, 7:30 p.m., Gwinnett Central Baptist Church on Gwinnett Dr., Lawrenceville, GA. 147.075+ PL 82.5. Contact: Mike Swiderski, K4HBI, (770) 449-0369. 8/00

HAWAII

Big Island Amateur Radio Club. P.O. Box 1938, Hilo, HI 96721. Meets 2nd Sat./monthly, 2 p.m., Keaau Community Ctr., behind Fire Station on Old Volcano Rd., Keaau. Talk-in on 146.88(-). Lunch, 11 a.m. Fridays, Hilo Hawaiian Hotel - Queen's Court Restaurant. 9/00

Emergency Amateur Radio Club, (EARC). P.O. Box 30315, Honolulu, HI 96820-0315. Meets 4th Thurs./monthly, 7 p.m., Lincoln Elementary School, 615 Auwaioimu, Honolulu. Nets: nightly 7:30 p.m., 146.88 & 146.80. Rptrs: 146.76(-), 146.80(-), 146.88, 146.98(-), 146.94(-). Info: (808) 256-6001, WH6CZB. 12/99

Koolau Amateur Radio Club, (KARC). 45-145 Mikihilina St., Kaneohe, HI 96744. Meets 2nd Sat./monthly, 9:30 a.m., Hooamalua Botanical Garden., Kaneohe, HI. Info: (808) 235-3042. http://www.chem.hawaii.edu/karc/ 8/00

ILLINOIS

Chicago FM Club Inc., (CFMC). P.O. Box 1532, Evanston, IL 60204. 146.76(-) PL 107.2/224.10/224.18/443.75 PL 114.8. Ham help line: (773) 262-6773. Info net Tues., 9 p.m. on 146.76(-). Meets 3rd Wed./monthly, 8 p.m. 8/01

Dupage Amateur Radio Club, (DARC). P.O. Box 71, Clarendon Hills, IL 60514. Meets 4th Mon./monthly, 7:30 p.m., Fire Station #3, between 59th & 63rd, Westmont, IL. Net Sun., 9 p.m. on 145.250. W9DUP rpters. 145.25(-) 107.2PL, 442.550(+)- PL 114.8, 224.68(-). Info: (630) 985-9256 10/00

Fox River Radio League. P.O. Box 673, Batavia, IL 60510-0673. Meets 2nd Tue./monthly, 7:30 p.m., Old Bank Bldg., 900 No. Lake St., lower level, Northgate Shopping Ctr. & Rt. 31, Aurora, IL. 8/00

Hamfesters Radio Club, W9AA. P.O. Box 42792, Evergreen Park, IL 60805. Meets 1st Fri./monthly, 7:30 p.m., Crestwood Civ. Ctr., 139th & Kostner, Crestwood, IL. Nets: Sun. (local) 0100 UTC, 28.410 MHz; Mon. 9 p.m. 146.43 (S.), Packet Mailbox 145.65 MHz. Info: (312) 974-3291. 2/00

Peoria Area Amateur Radio Club, (PAARC). P.O. Box 3508, Peoria, IL 61612-3508. Meets 2nd Fri./monthly, Red Cross Chapter House, 311 W. John Gwynn Jr. Ave., Peoria, IL. Voice mail: (309) 692-3378. Rptrs: 147.075(+)& 146.85(-). 8/00

Schaumburg ARC. P.O. Box 68251, Schaumburg, IL. Meets 3rd Thurs./monthly, 7 p.m., Rec. Center, Bode and Springinguth Roads. (630) 612-9446. <http://members.aol.com/sarcradio> 10/00

The Starved Rock Radio Club, W9MKS. P.O. Box 198, Tabor St., Leonore, IL 61332. Meets 1st Mon./monthly, 7:30 p.m. Rptr. net 7 p.m. Wed./wkly., 147.12(+), 4/00

Wheaton Community Radio Amateurs, (WCRA). P.O. Box QSL, Wheaton, IL 60189. Meets 7:30 p.m., 1st Fri./monthly, College of DuPage, Wheaton, IL. Rptrs: 145.39(-) (107.2), 224.14(-), 444.475(+)(114.8). info: Ron Hensel, K9ZE, (630) 365-0213, k9zze@aol.com 8/00

LOUISIANA

Baton Rouge ARC. Meets last Tue./monthly, 7 p.m., Catholic High School, 855 Hearstone Dr., Baton Rouge, LA. Net: 146.79MHz, 8:30 p.m. Sun. www.brac.org. E-mail: W5GIX@aol.com. 11/00

MAINE

Androscoggin Amateur Radio Club. Meets 1st Wed./monthly, 7 p.m., Auburn Police Station, 1 Minot Ave., Auburn, ME. Info: (207) 782-8699. 6/00

MARYLAND

Maryland Mobiles Amateur Radio Club (MMARC). P.O. Box 935, Severn, MD 21144. Meets 1st Fri./monthly, 7:30 p.m., Baldwin Hall, Generals HWY, Millersville. Info net each Mon. 8:30 p.m. on 146.805(-), tone 107.2 Hz. 4/00

MASSACHUSETTS

Genesis Amateur Radio Society. P.O. Box 1234 Plymouth, MA 02362. Meets last Mon./monthly, 7:30 p.m. at Plymouth Airport, So. Meadow Rd. Tues. net: 146.685, W1LM, 8 p.m. 7/00

Quannapowitt Radio Assoc., Inc. 6 Savin St., Burlington, MA 01803. Meets 3rd Thur./monthly, 7:00 p.m. at Wakefield Public Library, 345 Main St., Wakefield, MA, Sept. to May. Info: Jim Chamberlain, N1AKG, (781) 944-5098. 5/00

MICHIGAN

Adrian Amateur Radio Club, WB7QE. Box 26, Adrian, MI 49221. Meets 1st Fri./monthly, 7:30 p.m., Civil Air Patrol Bldg., Lenawee Co. Airport, Cadmus Rd., Adrian. ARES net Sun., 9 p.m. 145.37(-). Info: Neil Griffith, KC8DAR, (517) 263-5774. 6/00

Genesee County Radio Club, Inc. Meets 3rd Tues./monthly, 7:30 p.m., Genesee Area Skill Center, Torrey Rd., Flint, MI. (810) 733-2082. 3/00

Hiawatha Amateur Radio Assoc. of Marquette Co. P.O. Box 1183, Marquette, MI 49855. Meets 1st Thurs./monthly, 7:30 p.m., 108 Stratofort, K.I. Sawyer AFB, MI. For info contact: Richard Schwenke, N8GBA, (906) 249-3837. 10/00

MINNESOTA

St. Cloud Amateur Radio Club. Meets 3rd Thurs./monthly, 7 p.m., Radio Club Bldg., 401 4th St. N., Waite Park, MN 56387. Info: (320) 255-1410, 146.94 or 147.015 or www.w0sv.org 3/00

MISSISSIPPI

Jackson Amateur Radio Club, Inc. Meets 3rd Thurs./monthly, 7 p.m., Am. Red Cross Bldg., Riverside Dr., Jackson, MS 39202. 11/00

MISSOURI

Macon County ARC. P.O. Box 13, Macon, MO 63552. Meets last Thur./monthly, 8 p.m., Macon R-I High Sch., m.167. Net every Thurs. at 8:30 p.m. 146.805. E-mail: n0pr@onelist.com 12/99

NEVADA

Frontier Amateur Radio Society, (FARS). Meets 1st Sat./monthly, bkfst. mtg. 10 a.m., Chicago Hot Dog Drive In, 1078 No. Rancho Dr., Las Vegas, NV, after AES swap meet. Club info: Jim Frye, NW70, (702) 456-5396 or Bill Scarborough, W6GASL, (702) 269-9551. 8/00

Sierra Intermountain Emergency Radio Assoc., (SIERA). Meets 2nd Tues./monthly, 7:30 p.m., Minden Med. Ctr., Hwy 395 & Ironwood Dr., Minden, NV. Contact: George Upbebe, W7WE, (702) 265-4278, Rpt. 147.330 MHz. 1/00

Wide Area Data Group, Inc. P.O. Box 3132, Sparks, NV 89432. Meets 1st Sat./monthly, 8:30 a.m., JM Restaurant & Grille, 1885 S. Virginia, Reno. Info: (702) 356-8200. Call on 147.30(+)-MHz. 5/00

NEW HAMPSHIRE

Port City Amateur Radio Club, (PCARC), W1WQM. P.O. Box 1587, Portsmouth, NH 03802. Meets 1st Wed./monthly (Sept.-June), The Edgewood Cir., 928 So. St., Portsmouth. Rptr. 146.805(-) PL 127.3, 110.9, 88.5. 11/00

NEW JERSEY

Bergen Amateur Radio Association, (BARA). P.O. Box 304, Hackensack, NJ 07601. Meets 1st Sun./monthly, New Milford Elks Lodge, Patrolman Ray Woods Dr., New Milford, NJ 07646. Nets: 28.350 Mon. 9 p.m., 146.79(-) 9 p.m. Wed. 6/00

South Jersey Radio Assoc., (SJRA), K2AA. Meets Jan.-Oct., 4th Wed./monthly, 7:30 p.m. (Nov.-Dec. 3rd Wed), Bloomfield Fire Hall in Pennsauken, NJ. Talk-in: 145.29(-) rptr. 8/00

NEW YORK

Amateur Radio Association of the Tonawandas (ARATS) P.O. Box 430, No. Tonawanda, NY 14120. Meets 3rd Tues./monthly (except July & Aug.), 7:30 p.m., Sweeney Hose Co., 499 Zimmerman St., No. Tonawanda, NY. Talk-in: 146.955(-) rptr. W2SEX. 12/99

Genesee Radio Amateurs, (GRAM). P.O. Box 572, Batavia, NY 14021-0572. Meets 3rd Thurs./monthly, 7:30 p.m. (except Jul, Aug, Dec), Am. Red Cross, 220 East Main St., Batavia, NY. URL: <http://hamgate1.sunyerie.edu/~gram> 4/00

Hall of Science Amateur Radio Club. P.O. Box 150131, Kew Gardens, NY 11415. Meets 2nd Tue./monthly, Hall of Science Bldg., 47-01 111 St., Flushing Meadow Park, 7:30 p.m. Info: Voice mail (718) 760-2022. 2/00

PROS, Pioneer Radio Operators Society. Meets 1st Wed./monthly, 7 p.m., Sardinia Town Hall, Savage Rd., Sardinia, NY. Net 9:15 a.m. Thurs. 3853 MHz. 5/00

The Radio Club of J.H.S. 22, N.Y.C., Inc. WB2JKJ. P.O. Box 1052, New York, NY 10002. 24-hr. hotline: (516) 674-4072. Fax: (516) 674-9600. E-mail: crew@wb2jkj.org. Non-profit org. using Ham Radio to enhance the education of youngsters, nationwide. Join us—"Class-room Net", 7.238 MHz, 7 a.m. E.S.T. PSE QSL! 10/00

South Towns Amateur Radio Soc. (STARS). Meets 1st Thurs./monthly, 7:30 p.m., Hamburg Youth Ctr., Prospect Ave. Hamburg, NY (exc. Jul, Aug @ NIKI Base). Info: N2TEZ, 180 University Ave., Depew, NY 14043. Web: www.cmp-express.com/stars. Rpt: WB2ELW 147.090(+) PL107.2 11/00

Suffolk County Radio Club, (SCRC). Meets 3rd Tues./monthly, 8 p.m., Bohemia Rec. Ctr., Ruzicka Way, Bohemia, NY. Talk-in: 145.21(-) rpt. Info: W.S. Black, KB2YAP, (516) 289-5587. 5/00

Westchester Emergency Comm. Assoc., (WECA). Meets 2nd Mon./monthly, 7:30 p.m., Westchester County Ctr., White Plains, NY. Contact WECA INFO LINE (914) 741-6606 for details. Talk-in WB2ZLW 147.06(+)-PL 114.8/2A. 10/00

Yonkers Amateur Radio Club, (YARC). Meets 2nd Sun./monthly, 10 a.m., 1st Pct., Yonkers Police Station, E. Grassy Sprain Rd., Yonkers, NY. Info: P.O. Box 378, Centuck Sta., Yonkers, NY 10710. (914) 963-1021. 146.865(-), 440.150(+). 2/00

NORTH CAROLINA

Mecklenburg Amateur Radio Society. Meets last Tues./monthly (except Dec.), 7:30 p.m., East Baptist Church, 6850 Monroe Rd., Charlotte, NC. Talk-in 146.94(-). Net 9 p.m. nightly. Contact: John Covington, W4CC, (704) 334-3900, e-mail: w4cc@w4bfb.org, website: <http://www.w4bfb.org> 12/99

Stanly County Amateur Radio Club. Stanfield, NC. Meets 4th Thurs./monthly, 7 p.m. Talk-in 146.985(-) for location. Wed. net 9 p.m. 146.985(-). Fri. tech net 9 p.m. 147.390(+). Ph: (704) 888-4815. Web page: www.qsl.net/W3CARC/ 5/00

OHIO

Ashtabula County ARC. Ken Stenback, W8KS (964-7316). County Vo-Ed School, Jefferson, OH. Meets 3rd Tue./monthly, 7:30 p.m., County rptr., 146.715(-). 12/99

Clyde Amateur Radio Society (CARS). Meets 2nd Tue./monthly, 7:30 p.m., Municipal Bldg., Clyde, OH 43410. NF8E rptr. 145.35(-) and 442.625(+) MHz. Net Sun. 9 p.m. Info: E. Remaley, KA8CAS. 10/00

Toledo Mobile Radio Association. P.O. Box 273, Toledo, OH 43697; (419) 243-3836. Meets 2nd Wed./monthly, 7:30 p.m., Luke's Barn, Lucas County Rec. Ctr., 2901 Key St., Maumee, OH. 147.270(+)-Net every Sun. 8:30 p.m. Website: www.tmrhamradio.org 3/00

Van Wert Amateur Radio Club, Inc. P.O. Box 602, 1220 Lincoln Hwy., Van Wert, OH 45891. Meets 1st & 3rd Sat./monthly, 8 p.m. Call-in: 146.85(-). 3/00

Western Reserve Radio Assoc. P.O. Box 81252, Cleveland, OH 44181-0252. Meets 2nd Wed./monthly, 7:30 p.m., Jenkins Communications Ctr., Main St., Olmsted Falls, OH. Info: C. Bade, W8CJB, Sec., 146.73(-), 444.900(+) MHz. 10/00

OREGON

Central Oregon Coast ARC. P.O. Box 254, Florence, OR 97439. Meets 2nd Sat./monthly, at Bliss' Route 66 Restaurant at Hwy 101 & 12th St. Net Wed. 7 p.m., 146.80(-). Info: 997-2323 or 997-4074. 1/00

Central Oregon Radio Amateurs, Ltd. (CORAL). P.O. Box 723, Bend, OR 97709. Meets last Thur./monthly, 7 p.m., Bend Sr. Ctr., 1036 NE 5th, Bend, OR. 146.940(-) MHz. Info: (541) 388-3831. 10/00

Hoodview Amateur Radio Club. P.O. Box 20624, Portland, OR 97220. Meets 3rd Thurs./monthly, 7:30 p.m., Mt. Hood Com. College/Gresham, Rm 1001. Rptrs: 147.28(+), 448.475(-) (tone 167.9) 5/00

Keno Amateur Radio Club. P.O. Box 653, Keno, OR 97627. Meets 3rd Thurs./monthly, 7 p.m., Keno Fire Stn. Rptr. 147.32(+)/K7ENO. Info: T. Hamilton, WD6EAW, Tel/Fax: (541) 883-2736. wd6eaw@cdsnet.net 12/99

Umpqua Valley Amateur Radio Club, Inc. P.O. Box 925, Roseburg, OR 97470. Meets 3rd Thurs./monthly, 7:30 p.m., Douglas County Court House, Rm. 310, Roseburg, OR. Info: W6QOT/R 147.12(+)(PL100) or (541) 863-7692. 7/00

PENNSYLVANIA

Butler County Amateur Radio Assn. P.O. Box 1787 Butler PA 16003-1787. Meets 1st Tues./monthly, 7:30 p.m., Boy Scout Ctr., 830 Morton Rd., Butler, PA. Call-in W3UDX/R 147.36(+). Net 10:10 p.m. nightly. 12/99

Mercer County Amateur Radio Club, W3LIF. P.O. Box 996, Sharon, PA 16146. Meets 4th Thu./monthly, 7:30 p.m., Shenango Valley Med. Ctr. Farrell, PA. Net, Thurs. 9 p.m. on 145.35(-) W3LIF, Digi. 145.05. 6/00

Mid-Atlantic ARC, (MARC), WSNWA. Meets 3rd Thurs./monthly, 8 p.m., Radnor Mem. Library, Wayne, PA. Rtrs 147.06, 145.13. Net, Sun., 8:30 p.m., <http://www.marc-radio.org> 11/00

VIRGINIA

Mt. Vernon Amateur Radio Club, (MVARC). Meets 2nd Thur./monthly (except Dec.), 7:30 p.m., Mt. Vernon Gov. Ctr., 2511 Parkers Ln., Alexandria, VA. Contact: Bob, K14KS, (703) 765-2313. E-mail: mvarc@junco.com, <http://www.mvarc.org>, Net: Tues. 8:30 p.m. 146.655-. 10/00

Portsmouth ARC. Meets 4th Thur./monthly, 7:30 p.m., Am. Red Cross Chapter house, 700 London Blvd., Portsmouth, VA. Talk-in 146.850. Info: C.I. Clements, Pres. (757) 484-0569. <http://www.series2000.com/users/wa4nvi/parc/htm> 4/00

Southern Peninsula Amateur Radio Club, W4QR (SPARK). Meets 1st Tue./monthly Sal. Army Com. Bldg., Hampton, VA. Rptrs 146.73(-), 449.55(-). VE Exam Info: (757) 898-8031, W4RTZ. 2/00

Virginia Beach ARC. Meets 1st Thurs./monthly, 7:30 p.m., Virginia Wesleyan College, Wesleyan Dr. off N. Hampton, Village 2 Commons, Graybeale Bldg., Virginia Bch, VA. 2/00

WASHINGTON

The Mike & Key Amateur Radio Club. Meets 3rd Sat./monthly, 10 a.m., Salvation Army Renton HQ., 720 Tobin St., Renton, WA. Talk-in on 146.82(-) (103.5 CTCSS) rptr. Doors open 9:30 a.m. 5/00

WEST VIRGINIA

Jackson County Amateur Radio Club. Meets 1st Thurs./monthly, 7:30 p.m., Saint John Episcopal Church of Ripley. Net Mon. 9 p.m. on 146.67(-) W8JNU/R. Info: D. Tennant, N8ZYB, Rt. 1, Box 188, Mt. Alto, WV 25264. 7/00

Tri-State Amateur Radio Assn. Meets 3rd Tues./monthly, 7 p.m., Am. Red Cross, 111 Veteran's Mem. Blvd., Huntington, WV. 5/00

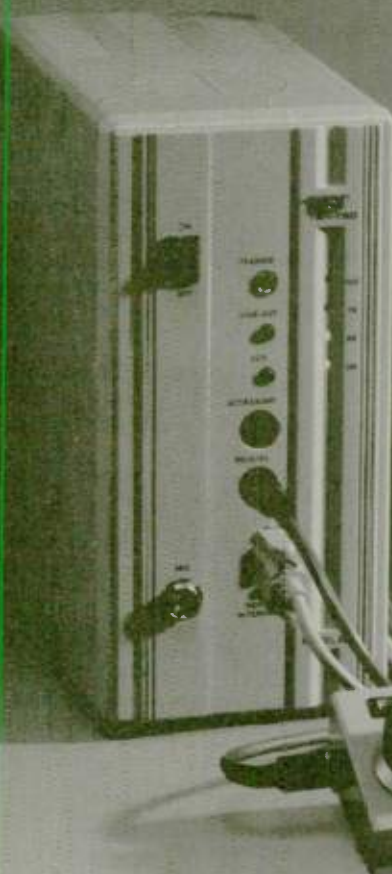
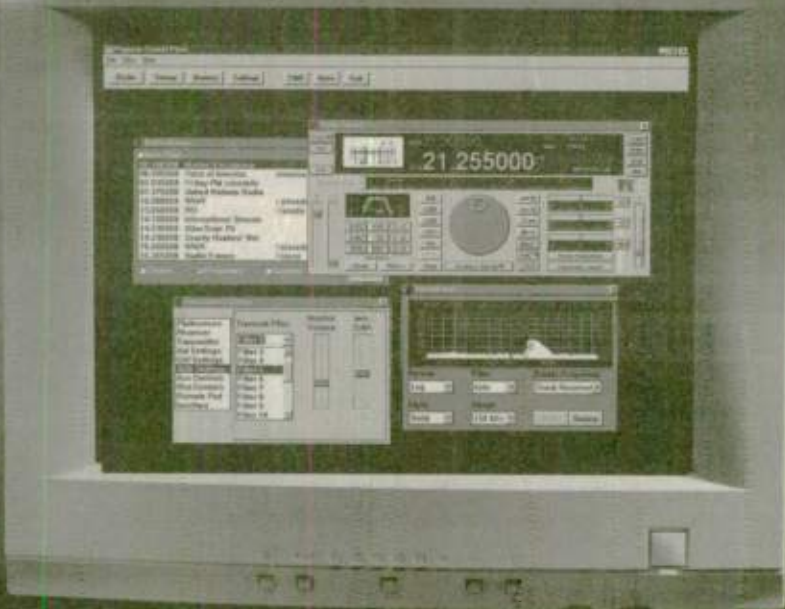
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A QRP time capsule

As we walk up to the doorstep of a new millennium, here are some items I'd place in a QRP time capsule, giving future generations of low power operators a window to who we were, and why.

A copy of Robert S. Kruse's, 1XAM, May 1924 *QST* article "New American Amateur." In his excellent book "History of QRP in the U.S., 1924 to 1960," Ade Weiss, WØRSP, painstakingly chronicles how Kruse, then *QST* technical editor, "thrust QRP into the limelight as an important facet of Amateur Radio."

Contrary to much modern thinking, radio amateurs in the U.S. did not lead the charge toward QRP operation in the early days. Australian operators, in particular, were reporting remarkable success at low power. Radio amateurs in the U.S. were being branded everything from "watt-hogs" to a "tribe of ampere hounds." "We said at the head of this article," Kruse wrote in the May '24 *QST*, "that a lot of foolish things had passed out of Amateur Radio (in the U.S.). Now, it is the turn of the 'ether buster,' the 'watt burner,' and the lad whose ideal life is to wreck the antenna ammeter! In place of this pest, we will have the 'New American Amateur,' whose ideal is not a BIG station, but a GOOD station, who does not care how far his station reaches but who will make it perform as perfectly as possible. In the future, the question will be, as the men say, 'Not how much,

but how good."

Kruse prompted some healthy soul searching at the time. His campaign against ignorance and abuse of power in many ways set the table for what has grown into the QRP movement that thrives today.

A faithful replica of the John Ruskin

was wildly popular after World War II because of its ease of construction, simplicity to operate and its solid performance on the air.

A trusty 6L6 power tube served as the tri-tet oscillator-transmitter and stood in its socket positioned between two strips of wood. The plate

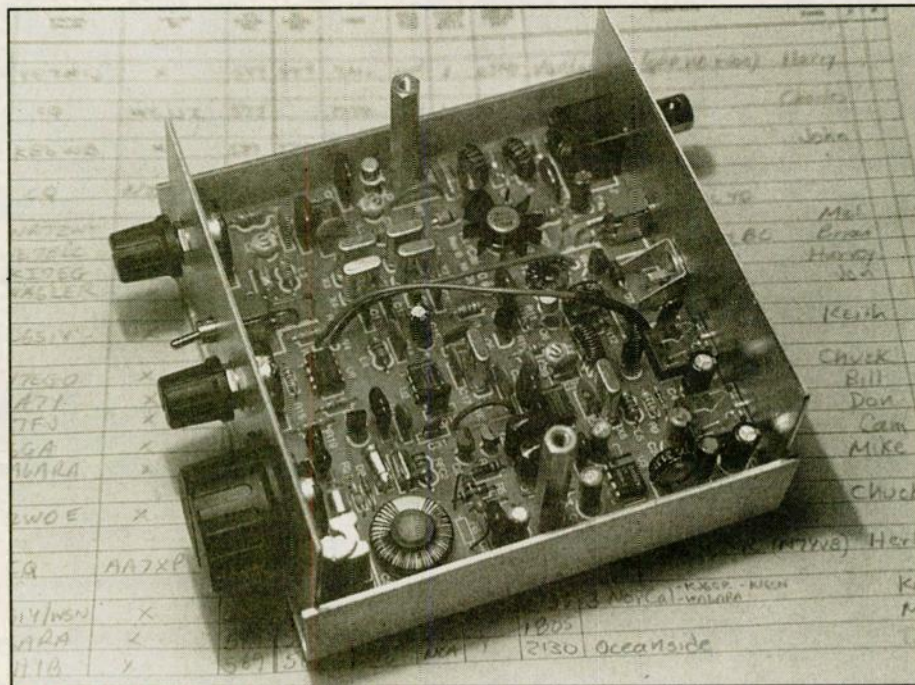
coil and antenna coil were wound in honeycomb-fashion and were held in place on the wooden chassis by vertically-mounted dowels. This rig, in my view, was the epitome of the simple QRP tube transmitter. It made homebrewing and operation accessible to many radio amateurs who did not otherwise have the financial or technical means to get on the air. It, no doubt, helped keep the QRP movement alive.

An unbuilt NorCal 40 transceiver kit from the NorCal QRP

Club. Designed as a club project in 1993 by Wayne Burdick, N6KR; Doug Hendricks, KI6DS; and Jim Cates, WA6GER; news of this 40-meter transceiver rolled like thunder through the QRP community.

In a review appearing in the February 1994 *Worldradio* QRP column, I wrote that "in the highly charged and densely populated world of QRP homebrew and design, there are only a handful of circuits that can rightfully called 'classic,'" but this one has certainly met the criteria.


Burdick, Hendricks and Cates "sowed the seeds for the 'NorCal 40' over burgers at a McDonald's in Pleasanton (CA). Their goal was to develop a simple, easy to reproduce construction project to help inaugurate the club they had recently founded. By October ('93), the kits were on the benches of eager homebrewers. To say they succeeded is an understatement."



The NorCal 40 transceiver as it appeared in the February 1994 *Worldradio* QRP column.

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The NorCal 40 made a loud and bold statement about the potential of a well managed and aggressive regional QRP club, established Burdick as a preeminent designer in the low power community and opened the door to homebrewing QRP gear to hundreds of radio amateurs. I suggest an unbuilt NorCal 40 for the time capsule so future generations of QRPers can share the joy so many of us felt after completing that kit. It will also give them perspective on how it set a new standard and model for club projects that would result in the dozens of commercial and club kits to follow.

QRP Amateur Radio Club International's *QRP Quarterly* magazine. Perhaps more than anything else about QRP ARCI, the quarterly journal is a tangible representation of an organization that has served the QRP community since 1961. In many ways, the group of dedicated radio amateurs who became its founders were picking up where Kruse, 1XAM, and others from the earliest days of QRP left off. The late Harry Bloomquist, K6JSS, is credited with forming QRP ARCI "with the aim of reducing QRM on the air by members voluntarily limiting their power to 100 watts or less at all times," according to a brief statement of history that appeared in many older issues of *QRP Quarterly*.

"Due to increasing interest in true low power operation, and through the leadership of then-president Tom Davis, K8IF, the club voted in the late 1970s to redefine its purpose in that

direction, and adopted the generally accepted definition of QRP as five watts output CW and 10 watts PEP SSB," it said.

"The QRP ARCI does not advocate the reduction of the legal power limits of amateurs in any country, and serves only to provide a forum for those who enjoy the thrills and challenges of building and operating with low power equipment."

Other QRP clubs would subsequently make the scene after QRP ARCI established a comfortable position on the low power landscape. The QRP Club of Great Britain (G-QRP, 1974), and the Michigan QRP Club (M-QRP, 1978) were major players of the era. In 1993 regional clubs were being formed at an unprecedented rate.

Like most organizations, QRP ARCI has had its share of challenging times and highly charged political battles. But the club has weathered the storms and continues to thrive as one of the world's top low power groups.

A CD containing archives of the QRP-L Internet Mail Group. In a strange irony that mirrors our technical times, most of the daily conversation among QRPers takes place not on the airwaves but via the Internet. The daily chatter taking place between computer literate QRPers worldwide has been significantly increasing since the mail group's formation in 1993.

It was started by veteran QRPer Chuck Adams, W7QO, who at the time was K5FO. An announcement on the rec.radio.amateur.misc USENET group

was the catalyst for what has become the "publication of record" for QRP. Bruce Walker, WT1M, had maintained the mailing list and FTP area from the group's inception on a system at Thinking Machines Inc., until August 1994, when the list was moved to NETCOM under the guidance of Mike Arda, N1IST.

Today, QRP-L's home is based on a system at LEHIGH.EDU and is still administered by Adams.

The e-mail/posting system has served as a conduit to QRPers from around the world and has performed reliably as a clearing house for ideas and activities year in and out.

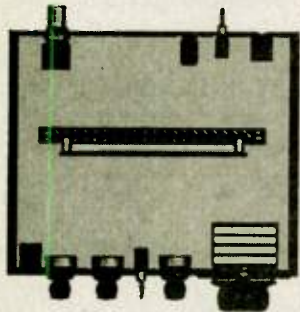
A copy of "The Joy of QRP: Strategy for Success." When writing this little yellow book for publication in 1984, I've wondered if Ade Weiss, WØRSP, had any idea what a huge impact he would have on the world of QRP.

Widely regarded as the most important QRP publication ever, "The Joy of QRP" deftly drew a roadmap for every aspiring low power operator with chapters titled "The Exciting World of QRP," "Sharing the Joys of QRP," "Planning for QRP Operation," "Putting a QRP Signal on the Air — Commercial Equipment," "Homebrewing the First QRP Rig," "General Operating Techniques," "Planning and Operating Specific Types of QRP Activity," and "R. F. Power Measurements." Many QRPers today cite "The Joy of QRP" as the push they needed for a plunge into low power operating.

Indeed, dog-eared copies of the 1984 edition were commanding a king's ransom before Weiss' classic work was reprinted in 1997. Fortunately, it is still available from the author. And although written more than 15 years ago, the basic concepts and tenets of QRP operation described by Weiss then are just as valid today.

That "The Joy of QRP" has enjoyed such a wonderful shelf life is an indication that its value will be appreciated for years to come — well into the new millennium. — *Richard Fisher, KI6SN can be reached at: 1940 Wetherly Way, Riverside, CA 92506 or via e-mail: KI6SN@aol.com.* ☺

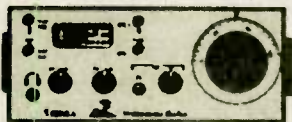
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10-10 in the new millennium

10-10 has set up two interesting programs to celebrate the new millennium. One of these is a challenge for the membership to enroll 2,000 new 10-10 members in the year 2000. This contest, to be known as "2K in 2K," is an automatic contest, in that there are no logs to keep, no records to keep, absolutely nothing for the membership to do except to get their call and 10-10 number on as many new member applications as possible. The Membership Committee will input all applications in a program designed by the 10-10 Official Programmer Jim Hardy, K4HAV #17605, to track and report the status of the contest during the year. Awards will be given to the top 10 active (paid-up) members whose call and 10-10 number are listed the most on new member applications.

See how simple this "2K in 2K"

contest is! Every new member application will be counted to determine the call and 10-10 number that appears the most times. Pass your call and number to those on 10 Meters that request information about 10-10 and be sure to tell them to list you on their application as one of their 10 contacts required for membership. Watch each issue of the 10-10 International News and the 10-10 column in *Worldradio* for a listing of the top 10 in the race to win this yearlong contest.

Y2K 10-10 QSO Party

Here is a challenge for all 10-10 members to make 2,000 contacts during the year 2000. Those making 2,000 contacts will receive a handsome plaque. Make 1,500, 1,600, 1,700, 1,800 or 1,900 contacts and receive a handsome mounted certificate for your effort. All contacts count. NO points, just 2,000



Chuck Imsande, W6YLJ
10-10 19636

total contacts during the Y2K. Contacts with either a 10-10 member or a non-10-10 member count. And here is one of the best rules. You can make repeat contacts with the same station at any time during the year, but not within the same 24-hour period.

The whole idea of this yearlong QSO Party is to make new friends and maybe encourage some non-members to become interested in 10-10 and join our organization. Making 2,000 contacts in 366 days (no I didn't make a mistake in the number of days — the year 2000 is a leap year) is a tough challenge you say. Right you are. 2,000 contacts are slightly over five contacts a day average, almost 40 contacts a week, or more than 167 contacts each month. That's a lot of 10-meter activity, but remember we have five QSO Parties each year. If you work all five QSO Parties only, that's only 400 contacts per QSO Party. Oh, you only work the three SSB QSO Parties, and then make at least 667 contacts during those three SSB Parties. Not an unreasonable task, if band conditions are favorable.

Logging? That's simple too! All that is required for your log is: Contact Number, 0001-2,000, date, call, 10-10 number (log a "zero" for contacts without a 10-10 number) No dupe sheets required. A paper log will be available for download from the 10-10-web site, www.ten-ten.org. A computer log is also acceptable as long as it follows the format noted for the paper log. For those members using the WIN1010 logging program, a free download file will be available to provide the necessary Y2K log for contacts entered into your WIN1010 program. Check Jim Hardy's web site at: <http://hds.net> for information about the free download. How simple can it get? Hold all logs until after the Y2K Party is completed (2400 UTC 31 December 2000).

Complete rules are listed on the 10-10 web site and in the *10-10 International News*. Read the rules and get ready for the Y2K QSO Party.

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New QSO Party scoring for 2000

The scoring for all 10-10 QSO Parties beginning 01 January 2000, will be two points for a contact with a 10-10 member and one point for a contact without a 10-10 number. After much discussion, and contact with a number of members, the Board of Directors voted to return to the old method of scoring beginning with the first QSO Party in 2000. New QSO Party cover sheets will be in the January issue of the *10-10 International News* and will be available for download from the 10-10 web site. The 10-10 Contest program in WIN1010 will also be revised in time for the first QSO Party in 2000.

The board also voted to revise the requirements for submitting a dupe sheet with logs. Beginning with the first QSO Party in 2000 the requirement for a dupe sheet will be required if fifty (50) or more contacts are listed in the log being submitted. For logs with less than fifty (50) contacts, a dupe sheet will not be required. It's that simple! 49 or less contacts, NO dupe sheet, 50 contacts or more, dupe sheet REQUIRED. This change has been suggested by a number of members and the Board has responded to your request.

Revised awards rules

The Operations Committee, under the Chairmanship of Ed Redwine, K5ERJ #11843, has with the cooperation of a number of members, completely revised the 10-10 Awards Rules to make them uniform for all awards. A simplified application form and standardized requirements were an objective of the committee effort. Along with the standardized requirements, each award has certain additional requirements, such as QSL confirmation required or not required, etc. Another revision is the standardized cost for all 10-10 awards, being set at \$2.00 for U.S. and \$3.00 DX. Upgrade seals are SASE and DX is \$1.00. These new awards rules make it easier to understand the 10-10 Awards Program. Copies of the new Award Program

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are available on the 10-10 Web Site, www.ten-ten.org.

CW net

A new 10-10 net has been started and meets on Mondays at 1700 UTC. Frequency is 28.100. It is a directed net and operates at approximately 18 wpm. The net will slow down when needed. The net uses the ARRL QN signals, International Q signals, and standard abbreviations, but the Net Control Station (NCS) will recognize plain English and use it when required. The NCS will be Tom VanBuskirk, K6TV #30896, and his location is Downey, CA. So look to Southern California and check into this new 10-10 CW net.

10-10 web site

For those new to 10-10, or who may be reading this column for the first time, let me remind all of the 10-10 web site. Every thing you will want to know about 10-10 is listed on the 10-10 web site. The address is www.ten-ten.org. You can find anything about 10-10 listed on our elaborate web site maintained by our Internet Coordinator, L.B. Cebik, W5RN #41159. If you have any trouble accessing the 10-10 web site, e-mail L.B. at: cebik@utk.edu.

Information about 10-10?

If you would like information about 10-10, and how you can become a member and receive your very own unique 10-10 number send \$2.00 and an address label for the return of your



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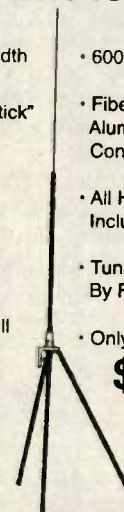
For further information, write:
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information package to: 10-10 International Net, Inc., Attention: Information Package, 643 N. 98th Street - PMB #142, Omaha, NE 68114-2342. No SASE please as the information package requires a 9 x 12 envelope. You will receive a copy of the Information Brochure, which contains everything you want to know about the 10-10 organization, a listing of all 10-10 Chapters, their day, time, and frequency of net operation and an application form. Also enclosed will be a copy of the QSO Party Information Brochure and a copy of the latest issue of the *10-10 International News*, the 32 page 10-10 quarterly magazine.

If your membership in 10-10 has expired and you would like to renew your dues, send your dues (\$10.00/year or \$25.00 for 3-years) to: 10-10 International Net, Inc., Attention: Dues Renewal, 643 N. 98th Street - PMB #142, Omaha, NE 68114-2342. You will become an "ACTIVE" member again and receive all of the benefits of 10-10 including the quarterly *10-10 International News*. Remember 10-10 numbers are issued for life and your originally issued number is always yours. If you have lost, or forgotten, your 10-10 number, send a #10 SASE to the above, marked to: Attention: 10-10 Number, and your original 10-10 number will be sent back to you. ☺

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Variability of the Ionosphere

My predecessor Bob Brown, NM7M, received an e-mail from Dave Fischer, NC7W, and Bob thought I would be interested in taking a look at it. So Bob forwarded it to me. Indeed, it's interesting, and here's the story.

Using contest logs and plotting run rates (QSOs per time interval), NC7W sees a very pronounced cyclic variation in the run rate, on the order of tens of minutes. Ignoring operator skill for the moment, is there an ionospheric basis for this observation? Yes, there is.

But before getting into this, let's review some basics. Our propagation prediction programs are based on a correlation between the smoothed sunspot number (SSN) for a given month (a 12-month running average) and the monthly median ionospheric parameters (critical frequencies, heights, etc). These programs are set up on an hourly basis, as all the ionospheric parameters came from ionosondes that took measurements on the hour. Some programs do give predictions on the half hour, but I'm sure it's derived by a simple interpolation of the hourly data.

So if we took a prediction program and tried to come up with what NC7W sees, we'd probably fail because our programs just don't have (nor were they intended to have) a resolution of less than an hour. Do we have any data to show what really goes on in between the hourly measurements? We sure do.

In late 1980 and early 1981, a digital ionosonde at NOAA (National Oceanic and Atmospheric Administration) in Colorado measured the ionosphere in three-minute intervals. The two ionospheric parameters focused on were MUF(3000)F2 (the maximum usable frequency for a 3000km F region hop) and hmF2 (height of the F region peak electron density).

Figure 1 is the plot of MUF(3000)F2 over a 6-hour span 16 February 1981. The cyclic nature of this parameter is immediately obvious, and the period

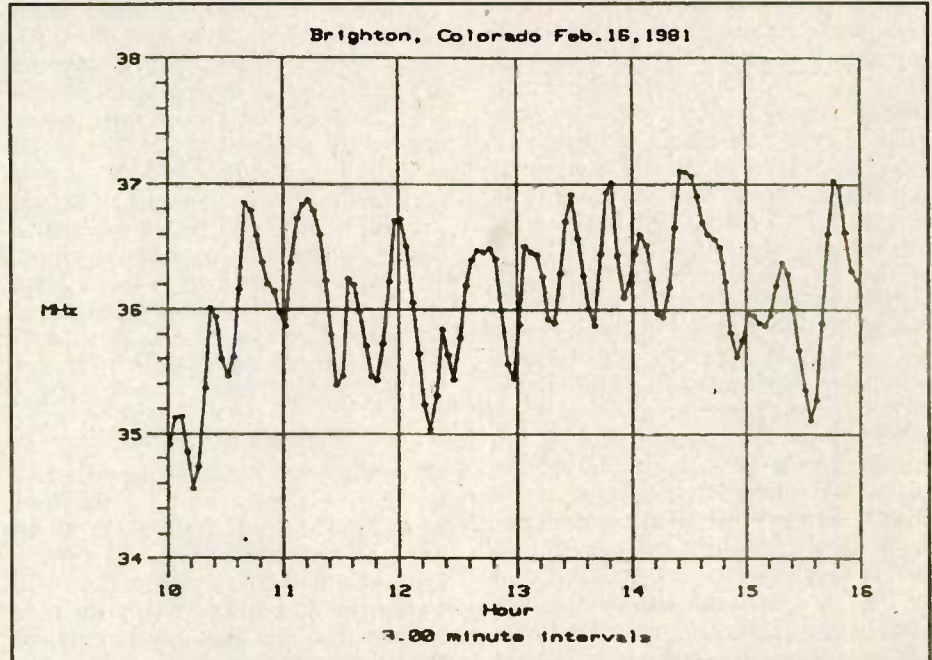


Figure 1 — Short term variability of MUF(3000)F2

of oscillation is in the 20 to 30-minute range.

Figure 2 is the plot of hmF2 over a 2-hour span 16 December 1980. The cyclic nature of this parameter is also obvious, with a period also in the 20 to 30-minute range. Looking at the percent changes for both MUF(3000)F2 and hmF2 says the change in hmF2 is probably the biggest factor in terms of propagation variability.

Thus there appears to be a basis for what NC7W sees from analyzing contest logs. Having operated in my share of contests, I think operator skill may also contribute somewhat to this cyclic phenomena. But I'm convinced that what NC7W is seeing, to a large part, is the variation of the ionosphere as depicted in the two figures. It's just tough to separate out the operator skill.

The cause of these variations in ionospheric parameters is suspected to be an atmospheric gravity wave (AGW), which is a propagating wave in the neutral atmosphere under the influence of gravity (acting downward) and buoyancy (acting upward). AGWs are usually classified as large-scale (periods of 50 minutes to 3 hours with horizontal speeds of about 500m/s), medium-scale (periods of 20-45 minutes and speeds of 80-450m/s), and small-scale (periods of 2-5 minutes and speeds of about 300m/s). The data in the figures and the contest log analysis by NC7W appears to be under the influence of a medium-scale AGW.

The ionospheric manifestations of AGWs are called traveling ionospheric

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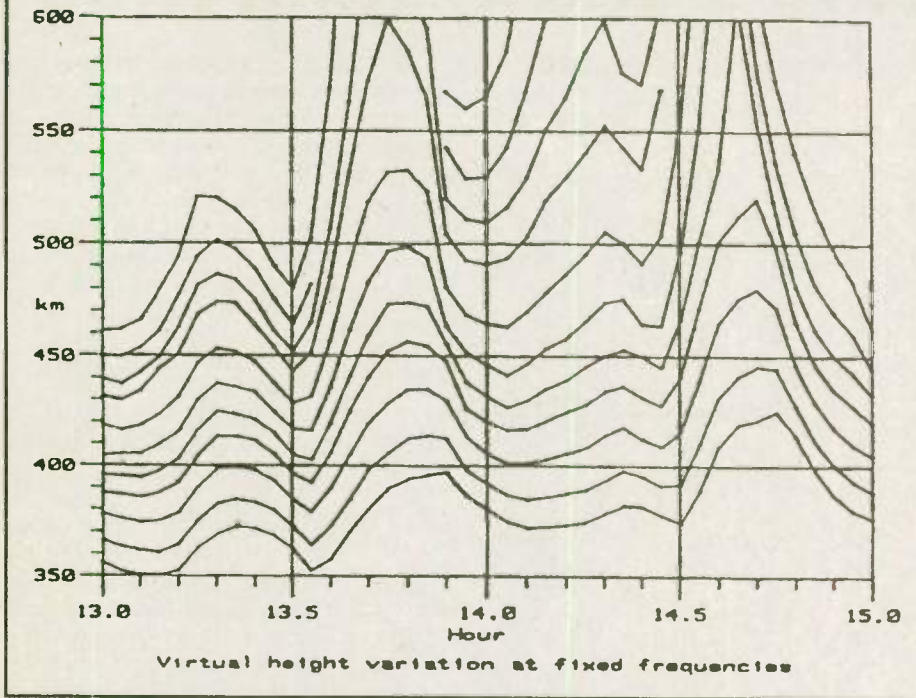


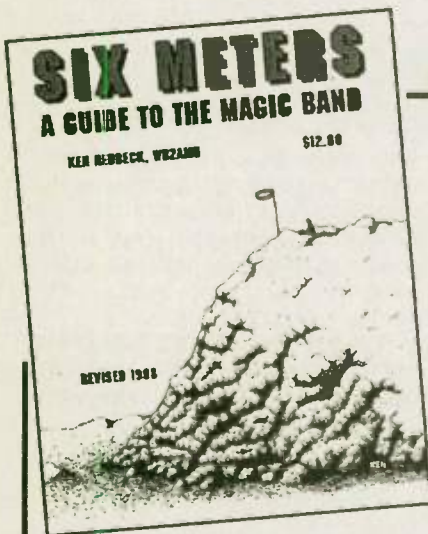
Figure 2 — Short term variability of hmF2.

disturbances (TIDs). One possible source of AGWs appears to be a single energetic event in the auroral ionosphere that propagates thousands of kilometers toward the equator. Other possible sources of AGWs are other ionospheric events, tropospheric events, earth-surface events (volcanoes and earthquakes), and solar eclipses

(remember last month's column?).

It's also believed that these travelling waves are more the norm than not — that sure is an interesting thing to think about, isn't it?

— Carl Luetzelschwab, K9LA, can be reached at: 1227 Pion Rd., Ft. Wayne, IN 46845 or you can e-mail him at: k9la@gte.net.



SIX METERS

— A Guide to the Magic Band

by Ken Neubeck, WB2AMU

A labor of love by the author, this 1998 revision of his earlier book provides comprehensive information on Six Meter equipment, modes, various forms of propagation, plus a little history of the Golden Age of Six Meters, in anticipation of increased operating opportunities as the sunspot activity increases. 96 pp.

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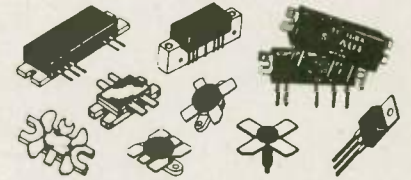
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A good, cheap, small HF antenna

An avid reader of this column writes to say that he wishes that the antenna manufacturers were all honest so Kurt could spend less time pointing out their unfounded claims and more time writing about antennas and how to build and adjust them. Don't hold your breath on the antenna claims but this month we will talk about building a wire antenna.

The VER-TEE

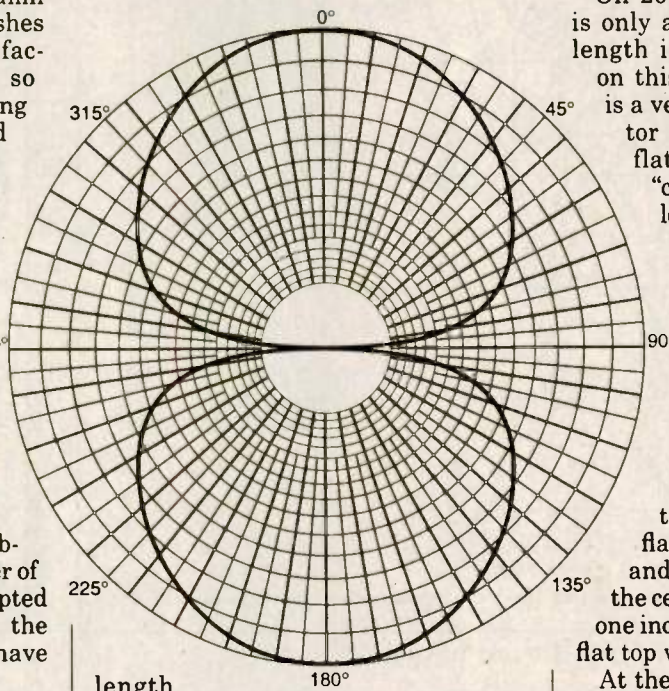
Here is a simple and inexpensive 10 and 20-meter antenna small enough to go on your patio or even on a small balcony. It was designed as a 40/80 dual band antenna by Pete Czerwinski, W2JTJ, (QST Dec 1961). He probably is better known as the designer of the beer-can vertical. Kurt has adapted the VER-TEE for 10/20 now that the sunspots are coming back. We'll have the 40/80 design too.

The 10/20-meter version is quite small. Its flat top is twelve feet long and, from its center, an eight foot length of 1/4" coax drops to a ground screen. You must have an adequate ground for the antenna to work. I used a piece of hardware cloth 3' wide and 10' long. This is not cloth but a galvanized iron mesh that you find at your local handyman store. It is rugged and lies flat nicely but is a bit expensive. You could use inexpensive aluminum window screen. You can't solder to it but a good mechanical connection would work just fine. Another way is to use radials if you have room. There should be at least four, each 15 feet long. Twelve radials would be a lot better.

How it works

Kurt thinks that this design is masterful in its simplicity. To understand it, you must remember that a coaxial cable can be considered a three-wire cable. There is the inner conductor, the inside of the shield (these two form the transmission line), and the outside of the shield. It's because of "skin effect" that RF currents don't penetrate the shield but just flow on its surface. That's why there can be completely separate currents flowing on the inside and the outside of the shield.

Take a look at the figure. The flat top is a 12' length of wire. At its center a



length of RG 58 coax hangs down. Only the center conductor of the coax is connected at the top. Only the shield is connected at the bottom. Part way down from the top the center conductor is shorted to the shield.

What gives here? Well, the coax is a quarter wave long on 10 Meters. At first we're interested only in the outside of the shield so the length is a quarter wave in "free space."

The top section of the coax above the short is a quarter wave long. Here we're interested in the cable as a transmission line. It's a quarter wave long where the velocity factor is about 0.66 making the length 2/3 of the "free space" wavelength.

On 10 Meters, the shorted quarter wave section of coax looks like an open circuit. It's in series between the coax shield and the flat top. So, on this band, the coax outer shield is disconnected from the flat top and serves as a quarter wave vertical antenna.

On 20 Meters, the shorted section is only an eighth wave long. At this length it looks like an inductor. So on this band the coax outer shield is a vertical antenna with an inductor in series between it and the flat top. The flat top acts as a "capacity hat." So we have a top loaded vertical resonant on 20 Meters.

How to build it

First put the flat top together. With an insulator at each end make it twelve feet long out of whatever antenna wire you have available.

Next cut an 8-foot length of RG-58 coaxial cable. At the top end where it connects to the flat top remove the outer jacket and braid for three inches. Trim the center conductor insulation back one inch. Use this to wrap around the flat top wire at its center.

At the other end of the coax remove two inches of the outer jacket. Undo the braid mesh until you have just straight wires. Push this up the two inches and cut off the inner conductor and its jacket. Straighten the braid and twist it into a rope.

Next push a pin into the coax at a point 5' 10" from the top of the braid. (This is easier said than done. Kurt had a sore thumb when it was finally in place.) Use an ohmmeter to make sure you have shorted the braid to the center conductor.

Test and adjustment

Now you can put the antenna together according to the drawing. Connect a length of coaxial transmission line long enough that you can stand away from it to measure its SWR. Connect your antenna analyzer or your SWR meter and transmitter and check the SWR across the 10-meter band. I got a minimum of 1.2 at 28.5 MHz rising to 2.0 at 28.0 and 29.0 MHz. To get this minimum anywhere you want it in the band move the pin. Go up to move it higher, down to move it lower.

After you're satisfied remove the pin and make a permanent short. To do this remove some of the outer jacket. Then push the braid aside to make a "hole" in it. Pull the inner conductor slightly out of the hole so you can remove a bit of its insulation. Then

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make your short.

Now move down to 20 Meters and check your SWR. I got a minimum of 1.5 at 14060 KHz rising to 1.6 at band edges. This was too broad indicating that my ground screen was inadequate (lossy) on 20 Meters. In spite of what you may read in antenna catalogs flat SWR is not good. It indicates losses. A larger ground screen would fix this.

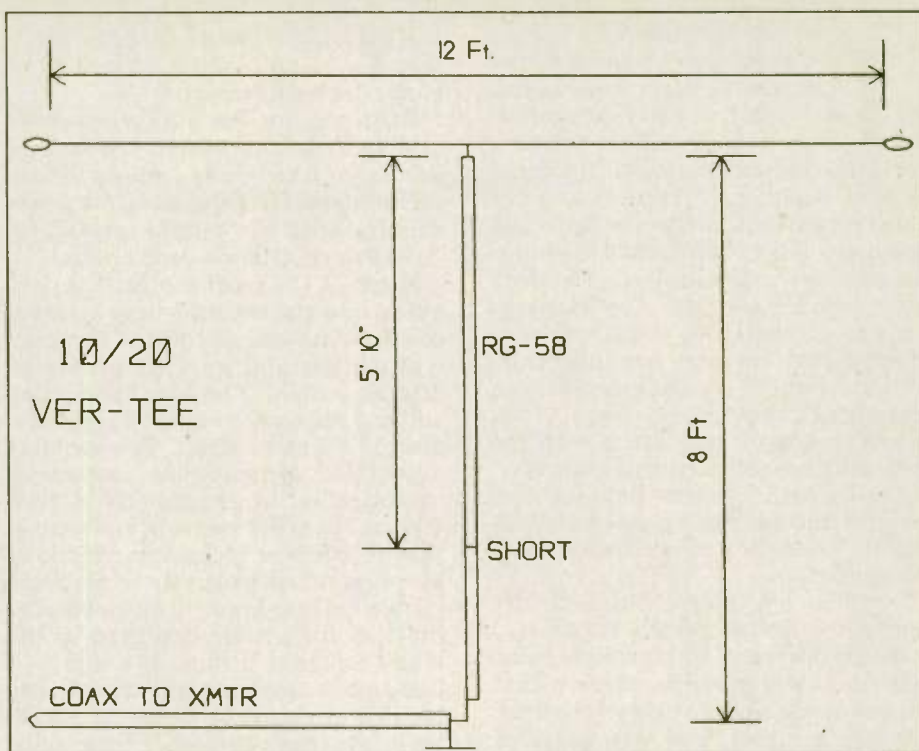
To adjust the minimum SWR frequency lengthen or shorten the flat top. That's it! You are ready to go on the air with your low cost, small dualbander.

The 80/40 Meter Version


Build this antenna in exactly the same way. Now the flat top should be 40' long, the coax 33' long and the short 22-1/2 feet from the top of the braid. And your ground screen or radials will have to be four times the size.

And the Beer Can Vertical?

This will not be coming. For one thing Lil finally talked Old Kurt into giving up beer drinking so as to obtain a slimmer figure and better health. That takes a lot of the fun out of building this particular antenna.



More important is the fact that W2JTJ built his antenna back when beer cans were steel and of a shape that

stacked well. Now they are aluminum, have rounded bottoms, and you can't solder them. That's progress? 

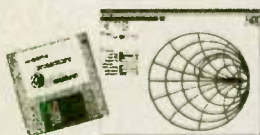
The Smith Chart

Electronic Applications of the Smith Chart, by Phillip H. Smith — This is an updated edition of the original, classic reference book by the legendary Smith Chart inventor himself. This book describes how the Smith Chart is used for designing lumped element and transmission line circuits and includes tutorial material on transmission line theory and behavior, circuit representation on the chart, matching networks, network transformations and broadband matching. It also includes a new chapter with example designs and a description of *winSmith* (see below). — Our Price \$59.00



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Entry categories

Just about every contest allows entrants to select from among a number of entry categories. Each category allows entrants certain opportunities, and imposes certain limitations. You should choose a category that corresponds to the resources of your station and the interest you have in the contest. You don't have to preregister in any category for any contest, and you are free to change your category in midstream, or even after the contest, provided you claim credit only for those contacts you made that were consistent with the limitations of your ultimate category.

While each contest has its own unique features and rules, the following are among the most common entry categories:

The first big categorization divides single from multi-operator stations.

Single operators, as you might infer, are those who operate alone. That means no one else can help you operate, log your contacts, turn your antenna, or find new stations to work. This doesn't inhibit your spouse, children, parents or a buddy from bringing you a cup of tea or a meal during the contest, but it does prevent them from sitting in for you while you make a trip to the smallest room or catch a few winks, or from listening in and helping you copy the stations you work.

Within the single-operator category, most contests have special subcategories dividing single-band from multi-band entrants. Multi- or all-band entrants may use all the bands available in the contest to accumulate contacts and multipliers towards their scores. Single band entrants are free to use any bands they wish, but may only count the contacts they make on one band towards their scores. Most very

serious single-band entrants make very few or no contacts on any other bands during a contest.

Even among the single-operator all-band entrants, there are several subcategories in many contests. These include special categories for those running QRP (5w output or less), or "Low Power" (100w output or less).

Many of the most competitive single-op all-band entrants have a second complete station, and while "running" (calling CQ and working people as fast as possible) on one band, they will use the second station to find new multipliers on another. This requires a lot of skill, mental agility, and careful attention to the ergonomics of your station. I am not aware of any contest that restricts or reclassifies this kind of operation, although there are some people calling for a "single-operator multi-transmitter" category in the major contests. I think it would be a bad idea to create a separate category for this group, as it serves to punish those who have developed their skills and have a will to innovate.

Most contests have one or more multi-operator categories. These allow several people to team up at one location with everyone's efforts contributing to the score. Working a contest with a few friends can be a great deal of fun, and a great way to get started in contesting.

The two most common kinds of multi-op categories are Multi-operator single transmitter (multi-single) and multi-operator multi-transmitter (multi-multi). I know of no contests that have special categories for multi-ops who use lower power levels.

Multi-singles are often just that — several operators taking turns on just one transceiver, but some contests (such as the CQ World Wide DX contests) allow multi-singles to operate a second or third station to collect new multipliers. There are usually very detailed rules describing the permissible uses of a "multiplier station," so check these out before you try.

The multi-multi category usually

limits entrants to transmitting only one signal at a time on any one band — in other words one station per band. If there are six bands allowed in a contest, the most competitive multi-multis will have six stations going simultaneously, and some have an additional station on each band looking for new multipliers, wired so that only one of the two transmitters can be used at any instant. This requires a lot of operators, a lot of gear, a lot of antennas and a lot of time to sort out problems of interference between stations. It also involves a lot of fun.

Some years ago, the ARRL's DX Contest added a new wrinkle in the multi-op game: a multi-operator TWO-transmitter category. This is a unique category and offers a great opportunity for some additional fun in this contest. To my knowledge, no other contest has copied ARRL's innovation.

"PacketCluster," a packet-radio-based system for sharing DX information, has revolutionized HF DXing, and had a great impact on contesting. Some contests have created a special "assisted" category for single-operators who use "PacketCluster" to find new multipliers, while others allow all entrants to use this help. If the rules of a contest are silent on packet or other kinds of in-contest assistance, you should assume that they are not permitted to single operators, and if you collect data from the "cluster," reclassify yourself as a multi-op. Multi-op entrants of all categories may freely use this kind of assistance.

Even if you enter a contest as a very casual entrant, if you choose your entry category correctly, you may end up a winner, as most organizers award certificates to the top-scoring entrant in each category in each US call area, or even each state.

Contest of the month — ARRL 10M contest

0000 UTC Saturday 11 December to
2359 UTC Sunday 11 December.

(PST: 4pm Friday 10 December to
4pm Sunday)

(EST: 7pm Friday 10 December to
7pm Sunday)

Ten Meters is a fascinating band. During the years of high sunspot activity, like right now, 10m can be open 20 hours a day or more, and be filled with huge signals from all over the world. During the low-sunspot years, 10M acts more like a VHF band with such strange kinds of propagation as Sporadic E (Es), meteor scatter and aurora. The ARRL 10M contest is well-

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timed to treat you to all these and more.

There are only three pieces of information to send and receive with each station you work: your call signs, signal reports and your locations. This is called the "exchange." For the location, U.S. stations send their state, Canadians send their province or territory. Stations in other countries send a "serial number." This is simply a number indicating how many contacts you have had in the contest so far. One's first contact is "001," one's second contact is "002" and so on. Here's what a typical SSB contact might sound like:

Station 1: "CQ Contest CQ Contest, Kilo Eight Alpha Quebec Mike, Kilo Eight Alpha Quebec Mike, Contest." (always use standard phonetics)

Station 2: "Lima Uniform one Echo Whiskey Lima" (LU? Hey, that's Argentina!)

Station 1: "LU1EWL, you're 59 Michigan."

Station 2: "Thank you, you're 59 017." (I'm his 17th contact so far.)

Station 1: "Thank you, Kilo Eight Alpha Quebec Mike." (And hopefully someone new will call.)

In this contest, folks use both CW and SSB. You can find most of the CW activity from 28.000 to 28.050MHz and in the U.S. Novice CW band from 28.100 to 28.150MHz. The SSB activity starts at 28.350 and runs to 28.600 or higher. Please note that the rules prohibit making contest contacts from 28.300 to 28.350 — to give non-contesters a "contest-free zone." Also, remember that you may work the same station twice in this contest — once on CW and once on SSB.

December is a great time for "Sporadic E" (Es) propagation. This refers to the "E-Layer" of the ionosphere, 75 to 150km above the earth. In December and June/July each year, small areas or "E-clouds" in this layer of the ionosphere will become active reflectors of radio signals from about 20MHz to 150MHz and perhaps higher. These openings are most noticeable in the evening and late night hours, and you can contact stations from 300 to 1,500 miles (500 to 2500km) away. Often the openings will be quite focused, and you may hear only stations from one small area at a time, then the cloud will shift, and you will hear another small area.

You can also work stations by bouncing your signals off meteors. Meteors, or small pieces of cosmic dust and rock, pass through and burn up in our

atmosphere every day. As they burn up, they leave a visible trail, called a shooting star. For us Hams, they leave an ionized trail that can reflect radio signals. Around 13 December each year, there is a regular meteor "shower," and on 10m, the "burns" can last from one or two seconds to a minute. The contest this year arrives just a little early for the full effect of the shower, but if you're lucky, you may be able to make a few contacts this way. You may complete a contact during a single burn, but more likely, it will take a few tries before you and the other person are sure you have all the info you need for a complete contact. Call CQ quickly, answer quickly, and be patient. The best time to work meteor scatter is from midnight to the early morning, and you may work people up to 1,200 miles (2,000km) away.

If there's a magnetic storm just before or during the contest, we may get a display of the northern lights (aurora borealis). The aurora is not only pretty to watch, but on 10M, you may hear raspy signals reflected off the auroral curtain from up to 1,200 miles (2,000km) away. If you have a beam, swing it between north-east and north-west and see what you can work. CW is much easier to copy via the aurora than SSB, and in either mode, you'll probably have to slow down to complete a contact.

How do you calculate your score? Count two "points" for each contact, or four "points" for each U.S. Novice or Technician-class station you work. U.S. Novices and Technicians will identify themselves by signing /N or /T at the end of their call signs (ie. WD9INF/N, KA8POW/T). Total all your "points" and multiply them by the total of the provinces, territories, states and DXCC countries that you worked on SSB and CW.

There are many entry categories

in this contest, and there's plenty of opportunity to win a nice certificate to hang on the wall. In each U.S. state, ARRL will award a certificate to the top-scoring High-Power (over 100w output), Low Power (100w or less output) and QRP (5w or less output) categories for single operators (one person operating and logging by him or herself). For each of those power categories, there are separate sub-categories for those who operate in both CW and SSB, in CW only, or in SSB only. There is also a multi-operator category, if you team up with a buddy or two to work the contest. That's ten possible certificates in every state! You may already be a winner!

Your Log

You don't have to submit an entry, if you don't want, but without an entry, you'll have no chance to win a certificate. If you use paper log sheets, you can get official forms for a large self-addressed stamped envelope or \$1 from ARRL, 225 Main Street, Newington CT 06111 USA. They also have a web site (www.arrl.org/contests) where you can get the forms.

If you log using a computer, there are a few excellent programs that handle this contest including "CT" by K1EA, "NA" by K8CC and "TRLog" by N6TR.

Send your log to ARRL (address above) within 30 days of the contest. If you log by computer, you can e-mail your entry to 10meter@arrl.org. Check this column in the October 1999 issue of *Worldradio* or e-mail contest@arrl.org for details. The results of this contest usually appear in *QST* magazine in June.



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Contest Calendar

Contest	Date & Time	Bands	QSO points	Multipliers	Exchange	Entry Categories	Entries
ARRL 160M	2200Z 3 Dec 1600Z 5 Dec	160M CW	3pt/VE, W 5pt/DX	ARRL Sections + DXCC countries	RST Section	Single Op: High power, Low power, QRP Multi-op	6 Jan ARRL or e-mail to 160meter@arrl.org
QRP ARCI Holiday Sprint	2000Z 5 Dec 2359Z 5 Dec	160-6M CW	5pt/ARCI member 4pt/non-mbr DX 2pt/non-mbr NA +2000 for home-brew TX +3000 pts home-brew RX	US States, Canadian provinces and territories, DXCC entities on each band Multiply the resultant score by the power multiplier" x15 for 0-250mW x10 for 250mW to 1W x7 for 1-5W x1 for over 5W	RST QTH ARCI members will also send their membership numbers	Single Op: All bands, single band, high bands, low bands, portable. Multi-op Multi-tx	30 days N6GA or e-mail to CamQRP@cyberg8t.com
ARRL 10M	0000Z 11 Dec 2359Z 12 Dec	10M CW & SSB	2pt/SSB 4pt/CW 8pt/USA novices/techs worked on CW	Canadian provinces, territories, Labrador, US States, DXCC	RST QTH DX stations will send Ser#	Single Op: Both or single mode, all with High, Low and QRP pwr cats. Multi-op., single tx, mixed mode (one multi-op category)	1mo. ARRL or e-mail to 10meter@arrl.org
Croatian CW Contest	1400Z 18 Dec 1400Z 19 Dec	160-10M CW	10pt/9A on 160-40M 6pt/9A on 20-10M 6pt/DX on 160-40M 3pt/DX on 20-10M 2pt/NA on 160-40M 1pt/NA on 20-10M	DXCC + WAE countries on each band	RST + ITU Zone	Single op all bands Multi-op single tx	HRAS Dalmatinska 12 10000 Zagreb Croatia
RAC Canada Winter	0000Z 19 Dec 2359Z 19 Dec	160-2M CW & Phone	10pt/VE 20pt/RAC stns. 2pt/DX	Can. Provinces and Territories (12) worked on each mode on each band.	RST Prov DX and VE0 send Ser#	Single Op: All bands, Low Power, Single band Multi-op	31 Jan 720 Belfast Rd Suite 217 Ottawa ON K1G 0Z5
Stew Perry Topband Distance Challenge	1500Z 27 Dec 1500Z 28 Dec	160M CW	1pt/QSO +1pt for each 500km measured from grid centre to grid centre	If you power is >100w mult=1 If you power is <100w mult=2 If you power is <5w mult=4	Grid square	Single op, Multi-ip No packet spotting allowed Please send in your log in ASCII either by e-mail or diskette	30 days KM9P or e-mail tbd@contesting.com
ARRL RTTY Roundup	1800Z 8 Jan 2359Z 9 Jan	80-10M RTTY	1pt/QSO	Canadian Provinces, Territories, US States, DXCC regardless of band	RST QTH	Single Op: All bands, high and low power Multi-op, single tx	1mo. ARRL or e-mail to rttyru@arrl.org
Japan International DX CW - Low Bands	2200Z 15 Jan 2200Z 16 Jan	160-40M CW	1pt on 40M 2pt on 80, 160M Work JA only	JA Prefectures (50) JAs will send 2-digit prefecture number	RST Ser#	Single Op: Both bands, single band Multi-op	1mo. Box 59 Kamata Tokyo 144
North American QSO Party - CW	1800Z 15 Jan 0600Z 16 Jan	160-10M CW	1pt/QSO	Canadian Call areas, US States, other NA countries	Name QTH	Single Op Multi-op, two tx All entrants must run 150w or less	1 mo. K6ZZ or e-mail to w9nq@ccis.com

Addresses: CQ - 25 Newbridge Rd., Hicksville NY, 11801 USA - ARRL - 225 Main St, Newington CT, 06111 USA - Callsign - Callbook Address - Bands: The 30, 17 and 12m bands are never used in any contest.

Other contests in December

ARRL also holds its annual 160m contest on the first weekend of December. This popular CW-only event is a great opportunity to experience 160m propagation, and to collect new states for WAS. There is relatively little DX activity in this contest, but there may be a few new ones waiting for you to work. Contesters will pretty well take over the bottom 75kHz of 160, but watch 1830-1835 for DX - they will transmit there, and listen outside the so-called "DX Window" for U.S. callers. Japanese top-band operators will transmit from 1907.5 and 1912.5kHz, so listen there at your sunrise, particularly if you are in the western part of this continent. The exchange in this contest is a signal report (RST) and your ARRL "section." "Sections" are the geographical units of the ARRL

field organization. In many parts of the U.S., this is the same as your state, but in more densely-populated areas,

such as New Jersey, Pennsylvania, New Jersey, Massachusetts, Florida, Texas, Washington and California, there are several "sections." If you're not sure, check with a local contesteer, traffic handler or ARRL appointee to find out what your section is.

The Radio Amateurs of Canada (RAC) sponsors the Canada Winter Contest on the second-last Sunday of the month. Look for Canadians on both CW and SSB from 160 through 2m, and prepare to send them a "serial number" (just like DX stations do in the ARRL 10M contest, above) for each QSO.

73, and good luck in the contests.
— Dave Goodwin, VE2ZP/VE9CB
can be reached via e-mail: ve2zp@rac.ca;
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Hamfests — December

FLORIDA

Amateur Radio Club Bradford Area's Hometown Hamfest will be on the 4th and 5th of December, from 9 a.m. - 5 p.m. Sat. and 9 a.m. - 4 p.m. Sun., at Waldo Bluegrass Park. Admission: \$4 (under 13 FREE). Tables: \$5 for 4th table FREE. Set-up: 7 a.m. until starts Sat. On site restaurant. Restroom hookups w/ a/c and water (for \$10), plus a/c for tailgaters (cost \$4, reserve early for a/c). Showers & will be 24 hr security. A regular non ham flea market & antique shops are nearby. There is a nearby AT&T machine (if needed). Possible VEX exams contact John if interested. For more info: John Bradley, 236 NW Cr 225, Lawtey, FL 32058. Phone: 904/782-1185. Email: jbradley@techcomm.net. Website:

www.angelfire.com/arcba/hamfest.html.

(Ed. You too, can have your hamfest listed in Worldradio. If you are planning one, send us the information. We would like to know the name of the club, the date, times, and any special information about your event.

In return, we'll send you some nifty gift subscriptions for the prize drawings. If you would like to pass out free sample of the best darn Amateur Radio magazine in the entire universe, we'll send some copies of Worldradio for you to distribute for us.

Of course, there's a catch. I have to have your information on my desk no later than the first of the month, two months before the publication date. In other words, if your event is going to be in March, I need your information by 01 January.)

FCI reorganization will not affect Amateur Radio enforcement

The pending reorganization of the FCC's bureau structure will have no impact on the current level of enforcement in the Amateur Radio Service. So says the agency's Riley Hollingsworth, K4ZDH. Hollingsworth says the changes could even make things tighter: "It's been a long wish of those of us in enforcement to have a bureau that is devoted to enforcement. As you know, when enforcement is intermingled with policy, rule-making and licensing, often it becomes the stepchild of the bureau involved. Now we will have a bureau specifically devoted, and more importantly, responsible for enforcement and I think Amateur enforcement will not miss a beat. If anything, I think that this will enhance

Amateur Radio enforcement by making it a permanent part of the Commission's infrastructure."

Hollingsworth will get a new job title. He will then be known as a Special Council for Amateur Radio Enforcement. — RAIN, Newsline

KO6YD Designs

<p>Screwdriver Antenna Memory</p> <ul style="list-style-type: none"> Adds memory to your screwdriver antenna Memoizes 16 positions and returns to 1 on command Eliminates band markings on antenna Mount: antenna out of visual site. (Great for RVs!) Easy to operate. VFO style knob replaces "up/down" tuning switch Control panel with 2 digit LED display, "VFO" knob and mode switch 	<p>Autoshift 706</p> <ul style="list-style-type: none"> Add automatic 2, 6, 13m repeater offset to the ICOM 706 & MKII Sets transmit frequency automatically based on receive frequency Easy to build and install <p>Autoshift Pricing: \$29.95 + \$4 S&H (CA Add Tax). Check or M/O.</p> <p>KO6YD Designs PO Box 1090 Elverta, CA 95626-1090 888-83-KO6YD info@ko6yd.com www.ko6yd.com</p>
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New Products

Information in "New Products" is supplied by the manufacturers to acquaint *Worldradio* readers with new products on the market.

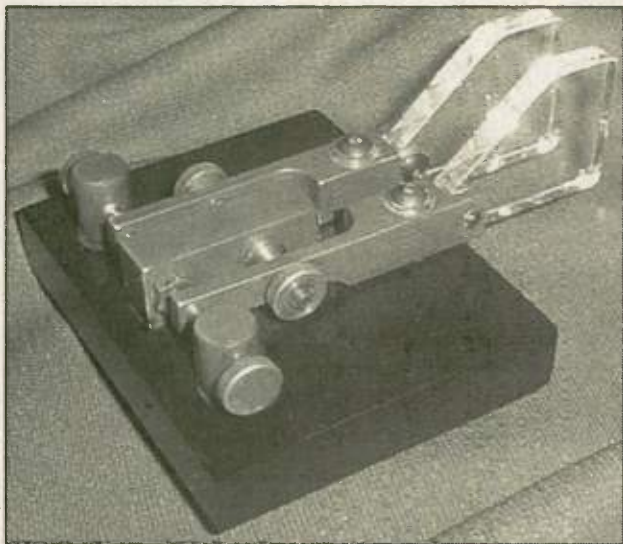
New Vibroplex key

The Vibroplex Co., Inc. now has a QRP key available. The Vibroplex Code Warrior Junior is the first QRP key offered by the Vibroplex Company. This key is the production version of the NORCAL K8FF key.

With a base measuring only 2 1/2 X 3 inches, this small iambic model is a perfect addition to any QRP or home station. Each key has a black power-coated base, clear paddles, magnetic action and no springs!

Orders are being taken now for the Code Warrior Junior key. Each key has a serial number, so early orders will receive keys with low serial numbers. This key is sure to become a collectable, so order yours today!

The Vibroplex Code Warrior Junior key is priced at \$99.95. To order, write or call the Vibroplex Co., Inc., 11 Midtown Park E. Mobile, AL 36606-4141. Phone 334/478-8873, Fax 334/476-0465.



Topographic map CD

DeLorme is proud to announce a set of new CD's is being added to their line of map products. The 3-D Topo Quads CD set is perfect for Amateur Radio operators operating in contests from hills and mountaintops. Gone are the days of using USGS topo maps and trying to match them together to determine the precise area you want to operate from. 3-D Topo Quads provides seamless integration of the USGS series of 7.5-minute quad maps, broken down state-by-state. The seamless integration of the maps allows viewing and printing of any region, regardless of how many quad maps it overlaps.

Among the many features of this new CD is GPS and handheld computer compatibility. Map details are provided in 97 different levels of detail, including 17 levels of scanned USGS 7.5 minute quad maps at 1:24,000 scale. The 80 other views feature DeLorme's up-to-date, street level mapping database.

Users can see three-dimensional views of any area being shown on the 2-D maps, whether viewing a USGS quad map or DeLorme's vector-based maps. The pitch, rotation and vertical exaggeration of this view can be easily adjusted.

The CD is available on a state-by-state basis, with the exception of California and Texas, which are divided into

two regions each. The CD is compatible with DeLorme-approved GPS receivers, including the DeLorme Earthmate GPS Receiver. With the purchase of the additional Solus Pro 1.5 software, people will be able to use the program with most Palm Computing organizers and Windows CE 2.0 handheld computers.

3-D Topo Quads runs on Microsoft Windows 95/93 and is available directly from DeLorme. Most states are available for \$149.95. Consumers can also purchase directly from DeLorme by calling 800/452-5931, or through the DeLorme Web site at www.delorme.com.



FT-90R Travel case and power supply

Cutting Edge Enterprises has added a new travel case and power supply for the new Yaesu FT-90R transceiver. This new unit allows the user to take the radio along into the field as a stand-alone unit. The case is sturdy and weather-resistant made of laminated, heavy-duty black nylon with 1/4" foam padding and a comfortable carrying strap. The radio fits neatly into the case next to the 9 amp-hour rechargeable power cell that comes standard with the TransPorter. The fully automatic charger gives worry-free recharging via AC, DC, or with the optional roll-up solar cell recharger. Removable accessory pockets on the sides of the case are great for holding your microphone, charger and accessories. This is a fully equipped 50 watt station that you can carry with one hand. The TransPorter really expands the possibilities of this already versatile radio. Now, when I leave the house I can bring my FT-90R on planes, trains or safe and compact wherever I may travel.

The TransPorter retails for \$87.95. To order, contact Cutting Edge Enterprises, 1803 Mission St. Suite PME-546, Sanata Cruz, CA 95060. Telephone: 800/206-0115, Fax: 831/426-0115. E-mail: cee@cruzio.com.

VE Exams

As a service to our readers, *Worldradio* presents a feature listing of those VE exams, times and locations which are sent to us. Please remember that our deadline for publication is three months in advance. For example, if your VE group is scheduling an exam for December, please have the information to us by mid-September. *Worldradio*, 2120 28th St., Sacramento, CA 95818. Please mark the envelope "VE Exams." List the location (City), any information examinees should have (advance

registration, etc.) and the name and telephone number of a person to contact for further information. Examinees should bring their original license (along with a photo copy), two forms of identification (at least one should be a photo), and required fee.

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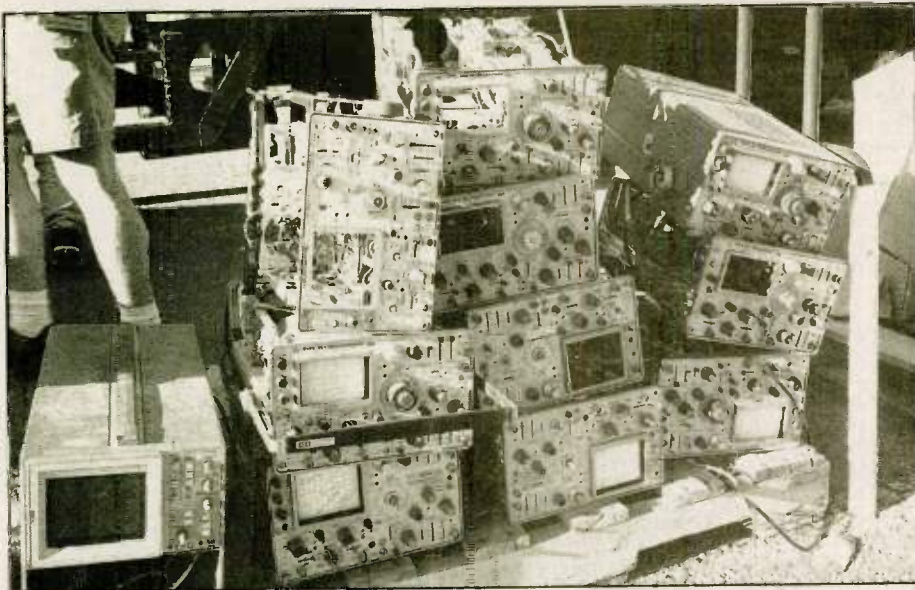
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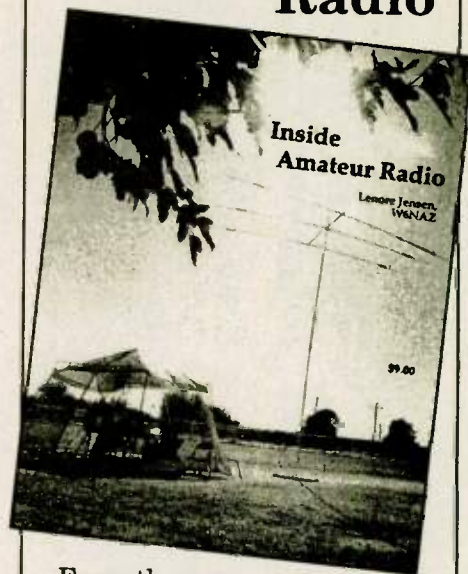
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Phase 3D ready for launch

AMSAT says the Phase 3D Amateur Radio satellite has been accepted as a payload for the "first suitable" Ariane space Ariane 5 vehicle launch. The announcement came on 08 October from Phase 3D Project Leader and AMSAT-Germany President Karl Meinzer, DJ4ZC, who said a launch opportunity could come during the first half of next year.

"As the primary agency responsible for securing a launch opportunity for Phase 3D, I am pleased to announce that AMSAT-Germany and Ariane space have now come to an agreement calling for the launch of P3D as a secondary payload aboard the 'first suitable' Ariane 5 flight," Meinzer said, adding that the Ariane 5 has been the primary launch vehicle from the very beginning of the project and the "unanimous choice" by AMSAT.

Specific details of the launch agreement, signed 05 October, were not released.

In San Diego for the gathering, AMSAT-NA President Keith Baker, KB1SF, said the news meant "lots of smiles around the conference room." Baker said he was pleased that AMSAT-DL's negotiations with Ari-

anespace resulted in a launch contract for Phase 3D and was delighted that Phase 3D was again slated to fly on an Ariane vehicle. "Following the resounding success of Ariane Flight 503, the Ariane 5 has now proven itself to be a very capable launcher," he said.

Once it's in orbit, Baker said, "the Phase 3D satellite will not only help us usher in the new Millennium, it will also signal the dawn of a brand new era for Amateur Radio."

While both AMSAT presidents expressed optimism for an early launch of the satellite, Meinzer expressed caution that the wait for the "first suitable" flight could still turn out to be a long one. Meinzer explained that Ariane's launch manifests are continually being updated to accommodate market changes as well as the availability of other payloads. "One or more changes" to P3D's anticipated launch date as well as its specific Ariane 5 mission number "are a very real possibility before our satellite actually flies," he said Baker emphasized that Phase 3D is "a standby passenger in every sense of the word," so a specific launch date is "very uncertain" right now. Phase 3D was slated to be delivered to the Guiana Space Center in

Kourou, French Guiana, in October.

ARRL Executive Vice President David Sumner, K1ZZ, welcomed the AMSAT announcement. "Congratulations to AMSAT's Phase 3D team on moving another important step closer to launch," Sumner said. "For those who have been putting off getting their stations ready for Phase 3D, the time for procrastination is just about over!" The League has been a major contributor to the Phase 3D project.

The Phase 3D project has been an international effort that has worked with donated resources. In addition to AMSAT-DL and AMSAT-NA teams, AMSAT groups from Austria, Great Britain, Japan, Canada, Finland, Russia, Belgium, the Czech Republic, Slovenia, France, New Zealand and Hungary also have participated.

AMSAT says that while Phase 3D's primary focus is on improved worldwide satellite communication, the satellite also will have a very positive influence on the future of Amateur Radio. "Phase 3D will be Amateur Radio's premier vehicle to continue the quest for new communications technologies for generations yet unborn," the AMSAT announcement said. —
ARRL Letter



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